
FISCAL POLICY
and
BUSINESS CYCLES

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INTRODUCTION

THE twin scourges that afflict the modern world—Depression and War—are not altogether unrelated. Bad as the Treaty of Versailles was, a steady improvement in international political relations could have been expected had we had the vision and courage to stop the Great Depression dead in its tracks and to move forward to higher levels of real income and employment.

The war now afflicting, directly and indirectly, the entire world cannot be explained by overly simplified dogmas running in terms of competitive capitalism and imperialistic rivalries. But it has, nonetheless, an economic basis—the inability of the great industrial nations to provide full employment at rising standards of real income. The disastrous economic breakdown of the thirties let loose forces which have set the world in flames. The ultimate causes of the failure to achieve a world order in the political sphere must be sought in the facts of economic frustration.

It is against the background of the past decade of economic and political futility that this book is written. It deals with the changing role of government, and particularly with fiscal policy as an instrument for regulating the national income and its distribution.

In June, 1939, it was my privilege to present a preliminary report on *Fiscal Policy and Business Cycles* to a conference of specialists in the fields indicated, called together under the

auspices of the Social Science Research Council at Rye, New York. This conference proved to be extraordinarily stimulating and helpful, and I am deeply in debt to all those who participated. They included Roy Blough, J. M. Clark, Gerhard Colm, Lauchlin Currie, Gottfried Haberler, C. O. Hardy, Simeon E. Leland, Abba P. Lerner, Arthur W. Marget, Lawrence H. Seltzer, Carl Shoup, and John H. Williams.

Especially am I under obligation to Dean Williams and members of the Seminar on Fiscal Policy at the Graduate School of Public Administration, Harvard University, for a thoroughgoing, critical analysis of the report referred to above and of oral presentations of my views. These, together with the discussion at the conference referred to above, have frequently forced me to clarify my thinking and to alter or restate my position. I have, moreover, learned much from conversation with, and from the writings of, my colleagues—Professors Schumpeter, Haberler, and Harris—and from prolonged discussions on many points with graduate fellows and younger faculty members, especially J. Keith Butters, Emile Despres, John T. Dunlop, J. K. Galbraith, R. V. Gilbert, Benjamin H. Higgins, G. G. Johnson, Martin Krost, Richard A. Musgrave, Kenyon E. Poole, Walter Salant, Paul A. Samuelson and Paul M. Sweezy.

In view of the controversial character of many of the issues discussed, it is especially important to say that none of the persons named above are responsible for the arguments presented or the conclusions reached in this book. With respect to the basic underlying philosophy, some are, as I understand them, in substantial agreement, while others are highly skeptical though splendidly sympathetic and open minded to ideas differing from their own.

I wish also to express my deep obligation to the Graduate School of Public Administration, Harvard University, for the seminar and research facilities which it has provided. In the preparation of certain chapters I have had the assistance of Willard D. Arant, Virginia Coughlan, Benjamin H. Higgins, and Mortimer Kaplan. In addition, David W. Lusher and Saul

R. Srole aided in assembling basic data. In a part of Chapter V, I have relied heavily upon the work of George Jászi, published in *Public Policy*, 1940 yearbook of the Graduate School of Public Administration. I am particularly happy to include the Appendix to Chapter XI, on "A Statistical Analysis of the Consumption Function," written by Assistant Professor Paul A. Samuelson, Massachusetts Institute of Technology.

Permission has kindly been granted to use parts or all of articles or addresses published elsewhere. These include the following: "Economic Progress and Declining Population Growth," *American Economic Review*, Supplement, March, 1939; "Extensive Expansion and Population Growth," *Journal of Political Economy*, August, 1940; "The Dynamic versus the Circular Flow Economy," an address delivered September 17, 1940, at the Bicentennial Celebration of the Founding of the University of Pennsylvania; "Price Flexibility and the Full Employment of Resources," *The Structure of the American Economy*, Part II: Toward Full Use of Resources, National Resources Planning Board, 1940; "Monetary and Fiscal Controls in War Time," *Yale Review*, Winter, 1940; "Defense Financing and Inflation Potentialities," *The Review of Economic Statistics*, February, 1941; "Some Aspects, Near-term and Long-term of the International Position of the United States" (joint author with A. R. Upgren), *American Economic Review*, Papers and Proceedings, February, 1941.

Finally, my sincere thanks and appreciation are due Miss Virginia Coughlan for her highly efficient secretarial work in the preparation of the manuscript and in seeing it through the press.

Part One

TOWARD AN UNDERSTANDING
OF THE THIRTIES

Chapter I

THE THIRTIES VIEWED AGAINST THE BACKGROUND OF EARLIER CYCLES

THE Great Depression, beginning in 1929, which had only partially been overcome, at any rate in the United States, by the end of the thirties, has been characterized as something quite unique in the long history of business cycles. To be sure, in a sense every cycle is unique and has special characteristics of its own. When, however, it is said that the Great Depression was a unique phenomenon, something else is meant than the ordinary degree of variation in duration and depth which we find from cycle to cycle.

There is not, however, unanimity of opinion among business cycle students with respect to the uniqueness of the Great Depression. There are those who hold that the severity of this depression and the difficulty of overcoming it fit quite well into the general scheme of cycle development over the last one hundred and fifty years.

Whether the Great Depression was indeed unique or not, it is at any rate true that it will be much better understood if it is set off against the background of the history of business cycle movements. To do so, it is necessary to differentiate various cycles or wavelike movements in the process of modern economic development.

Whether these movements may strictly be characterized as *cyclical* is at least debatable. Some would defend the use of the term "fluctuations" as more accurate, since the movements of output, employment, and prices vary so greatly from time

to time and are highly irregular. On the other side, those who run to abstract theorizing, and desire as far as possible to fit concrete data into a mold or pattern, will be inclined to search for greater regularity in the movements than can properly be described under the term "fluctuations." And, indeed, the data lend a good deal of support to this point of view. It is, at any rate, a reasonably defensible proposition that the movements of industry and business run in cycles sufficiently regular so that, within limits, a period may be assigned to their duration. Moreover, the analysis of the cycle gives strong support to the view that a movement, once started in one direction, tends to cumulate and grow stronger and stronger up to a certain point beyond which the generating forces weaken until a reverse movement finally develops in the opposite direction. If this is true, the movement is wavelike in character, and not merely an erratic fluctuation.

Into this discussion—on which there is an extensive literature—we shall not enter. We shall follow the view that economic development does run in cycles. We believe that there is sufficient justification in the historical and statistical record, supported by the theoretical analysis of the cumulative process, to warrant this assumption.

The upward and downward movements, which together make business cycles, are now commonly believed to be mainly associated with fluctuations in the volume of real investment. We distinguish between real investment and financial investment. When one purchases a share in a corporate enterprise or a bond or a mortgage, one is making a financial investment. When one, however, builds a house or a factory or a machine, one is making a real investment. Real investment may, of course, be measured either in value terms or in quantitative terms.

The fluctuations of cyclical movements may be characterized in terms of either money income, real income (the output of material goods and services), or employment. These three categories, to be sure, are not identical. Money income is a function both of real income and of price movements, while

real income or output differs from employment by reason of changes in productivity. Cyclically, however, the three move more or less in consonance, though the trend movement is likely to differ considerably under varying circumstances. For certain problems it is extremely important to differentiate sharply between them. But frequently in discussing economic fluctuations or cyclical movements all three may be regarded without serious error as moving together, whether in the upswing or in the downswing. This is particularly true for the short-run movements but less true for the longer-run developments.

We have noted that the upswing and downswing movements of income, output, and employment are mainly characterized by fluctuations in the rate of real investment. It is true, as we shall develop later, that the fluctuations in income, output, and employment involve more than fluctuations in real investment alone. Consumption also rises and falls with the cycle movement, but less violently proportionally than the rise and fall of real investment. Moreover, consumption rises or falls, in large part, in response to movements in real investment, though to some extent, as we shall see later, these movements are of an independent character unrelated to the movements of real investment.

We distinguish real investment from consumption in a more or less arbitrary manner, though following conventional terminology. By real investment we mean the purchase of capital goods, by which is usually meant: (1) producers' goods, including (a) industrial, public utility, commercial and financial plant and equipment and (b) inventories of stocks of goods in process or held for future sale; and (2) consumers' capital, including (a) residential building and (b) public works of all kinds, such as public buildings, roads, and the like.

In consumption we include purchases of: (a) personal services, (b) nondurable consumption goods, such as food and the like, (c) semidurable consumers' goods, such as clothing, and (d) durable consumers' goods, such as automobiles and household equipment.

The most general, all-inclusive statement of the essential character of cyclical movements is that they consist in an increase or decline, as the case may be, in the purchase of real investment goods and of durable consumers' goods as defined above. While the role of durable consumers' goods plays an increasingly important part, it is nevertheless still true, and formerly almost exclusively so, that the causes of business fluctuations are to be found mainly in the factors which bring about a rise and fall in the rate of real investment. This analysis will be developed with the necessary qualifications in subsequent chapters.

Major and Minor Cycles

Quite commonly, particularly in America, the term "business cycle" is applied with reference both to what is called the minor cycle and to the major cycle. And with respect to the term "depression," equally the term is applied both to minor recessions and to major depressions. In Europe, when the business or trade cycle is spoken of, reference is usually made to what we call the major cycle.

On the whole it is, we think, preferable to concentrate attention upon the major cycle in business cycle analysis. But it is not possible in doing so to overlook the fact that, particularly in the upswing phase of the major cycle, there regularly occurs, especially in American experience, one or sometimes two interruptions to the upswing movement. In seven of the fifteen major cycles in the period from 1807 to 1937 there were two minor recessions, and in eight of the major upswings there was one minor recession. Since 1883, out of six major cycles two were interrupted by two minor recessions and four by one minor recession.¹

The major upswing, as we have already noted, can be char-

¹ The figures given in this chapter on the number of cycles, major and minor, are based on the data in W. C. Mitchell, *Business Cycles, the Problem and Its Setting*, National Bureau of Economic Research, 1927, Chapter IV; W. M. Persons, *Forecasting Business Cycles*, John Wiley and Sons, 1931; and the *Cleveland Trust Bulletin*.

acterized essentially as an expansion in the rate of real investment. For the purpose currently at hand, it is most useful to classify real investment into the two categories suggested above: (a) inventories of commodity stocks and (b) real investment in fixed capital, including plant and equipment, housing and public construction. When an upsurge in real investment occurs, it is not unusual for the spurt in inventory accumulation to run ahead of the normal requirements indicated by the rising trend. When this is the case, sooner or later a temporary saturation in inventory accumulation develops, leading to an inventory recession. Not infrequently the minor setbacks experienced in the major upswings may be characterized as inventory recessions. But sometimes other situations may initiate or aggravate these minor recessions. Thus, for example, in the beginning of the major upswing it may be that large investment in improved machinery occurs and that after a time a temporary saturation is reached in this type of investment leading to a recession. The general buoyancy of the upswing, however, soon starts the economy upward again with a further burst of real investment after the temporary setback thus sustained. Sometimes special situations are partly responsible for minor recessions, such as critical international developments, labor disturbances, or even special factors having to do with major industries, such as the Ford shutdown in 1927. Regularly, however, inventory movements play an important role.

It is to be noted that very rarely do minor upswings interrupt the downturn of the major cycle. One notable case, however, was the temporary recovery which occurred in 1895 in the major downswing from 1893 to 1897. Following this very brief recovery, the economy continued downward in a deep and prolonged depression. There are very few other clear cases in our history of a temporary upturn in the period of the major downswing of the business cycle. There are, however, the brief recoveries of 1818, 1828, and 1841, all of them coming in the period of the long, difficult readjustment after the Napoleonic Wars. About this period we shall have more

to say later in connection with a discussion of the so-called "long waves." For the most part, the minor cycle in American experience has appeared in the form of a temporary recession in the general upswing of the major cycle.

It has been suggested (and to some extent this view is tenable) that both the Great Depression from 1929 to 1932 inclusive and the recovery from 1933 to 1939 follow a pattern which is fundamentally similar to other cycles. This is not to say, however, that those who advance this view would necessarily argue that there is implied in such correspondence anything in the nature of inevitableness about the course of the cycle development, whether in the downswing or in the upswing. Indeed, it is highly probable that wiser and sounder public policy could have modified very greatly the development both in the depression and in the recovery phases. What is true is that the experiences of this decade certainly become more understandable if we set them out against the background of the history of earlier American business cycles.

One generalization stands out very clearly from this record—one which apparently has been lost sight of in the current period, particularly with respect to the recovery movement from 1933 on. The generalization referred to is the highly important one that every prolonged upswing period has been interrupted by minor recessions. From the record of past American experience it is clear that a continuous upswing has rarely occurred extending without interruption beyond a period of about four years, and usually the period is somewhat shorter. From this we may deduce that the major upswing represents a discontinuous, jerky spurt in the rate of real investment; that the rapid expansion of real investment proceeds by fits and starts. Particularly, as we have noted, is it difficult in the upswing period, when demand and prices are rising, to hold to an appropriate pace the accumulation of inventories.

The American experience indicates that the major business cycle has had an average duration of a little over eight years. Thus, from 1795 to 1937 there were seventeen cycles of an

average duration of 8.35 years. In the hundred-year period 1837 to 1937 there were twelve major cycles of an average duration of 8.33 years. In the eighty-year period from 1857 to 1937 there were ten major cycles of an average duration of 8.0 years. And in the period from 1873 to 1937 there were eight major cycles of an average duration of 8.0 years.

Since one to two minor peaks regularly occur between the major peaks, it is clear that the minor cycle is something less than half the duration of the major cycle. In the one hundred and thirty-year period 1807 to 1937 there were thirty-seven minor cycles with an average duration of 3.51 years. In the eighty-year period from 1857 to 1937 there were twenty-three minor cycles with an average duration of 3.48 years. And from 1890 to 1937 there were fourteen minor cycles with an average duration of 3.36 years.

The major cycles vary in length from a minimum of six years to a maximum of twelve years, though with rare exceptions they fall within the range of seven to ten years, the average being slightly over eight years. The minor cycles have a range of from a minimum of two years to a maximum of six years, though they usually fall within the range of three to four years, with the average slightly over three and one-third years.

Building Cycles

But there are other factors, altogether aside from those which bring about the temporary interruptions in the broad sweeps of the major cycle, which profoundly alter the course of its development and influence the intensity and violence both of the upswing and of the downswing. One of the most important is one that, strangely enough, has been greatly neglected in the analysis of business cycles. And this factor is of peculiar significance for us, for it has an important bearing upon an understanding of the Great Depression of the nineteen-thirties.

The factor to which we refer is the fluctuation in building construction. This follows, in large measure, a wavelike move-

ment much longer than the major business cycle. Notable studies have been made by Rigglesman, Newman, Long, and the Federal Reserve Bank of New York City of building construction, both residential and nonresidential.² Rigglesman's study extends over a century from 1830 to 1935 and covers, in the earlier period, three cities and, in the later period, sixty-five cities. Long's study covers the period from 1864 to 1934 and includes twenty-nine cities. Newman's study is for seventeen cities and covers the period 1879 to 1934, while the study of the Federal Reserve Bank of New York City covers the years 1877 to 1934 and is for seven of the leading cities of the United States. All of these studies relate either directly to volume or to the value of building corrected for price changes.

From these studies it appears, according to the American experience, that building construction over the last hundred years has followed a fairly regular cyclical pattern. The Rigglesman study reveals six building cycles from 1830 to 1934, with an average duration of 17.33 years. The studies of Long and Rigglesman reveal four cycles from 1864 to 1934, with an average duration of 17.5 years. All four studies cover the period from 1878 to 1934 and reveal three cycles with an average duration of 18.7 years, while the period from 1900 to 1937 gives two cycles of an average duration of seventeen years. Thus, it appears that the building cycle averages somewhere between seventeen and eighteen years in length, or almost precisely twice the length of the major business cycle.

Question may be raised why building construction should have a cycle of its own different in length from that of the major business cycle. In this connection it is well to point out that building is not the only field of economic activity which reveals a periodicity varying from that of the major cycle. Thus, for example, we know that there is a cycle in textile

² See G. F. Warren and F. A. Pearson, *World Prices and the Building Industry*, John Wiley and Sons, 1937; W. H. Newman, *The Building Industry and Business Cycles*, University of Chicago Press, 1935; J. R. Rigglesman, "Building Cycles in the United States, 1875-1932," *Journal of the American Statistical Association*, 1933; C. D. Long, Jr., *Building Cycles and the Theory of Investment*, Princeton University Press, 1940.

production, which fits neither the minor cycle nor the major business cycle, of about two years' duration; that there is a cycle of hog production of about three to five years; and, indeed, a cycle of greater or shorter duration in the production of several of the more important domestic animals.

The corn-hog cycle, for example, has been explained by the interrelation of the price of corn and the price of hogs. When there is a large production of corn, and feed prices are low, farmers find that it is desirable to produce more hogs, but it takes some time to make the decision and some time to raise the new hog crop. Thus, after an interval an excessively large supply of hogs appears on the market, causing a low price of hogs in relation to the price of corn. Thereupon, the farmers conclude that it is better to sell the corn in the market and raise fewer hogs. Again, it takes some time to make the decision and to adjust the hog crop to the new price situation, and after a lag a relative shortage appears in hog production, causing a high price of hogs in relation to the price of corn. Thus, in the lag of reaction of producers to the market situation one finds the explanation of the hog production cycle.

In somewhat similar fashion one may advance a tentative explanation of the seventeen-eighteen-year cycle of building construction. We shall apply the argument particularly with respect to residential building, though the same analysis holds in large part for other kinds of construction. Let us suppose that residential building has for a period been depressed and that increasingly rental space is becoming scarce. Rents thus rise. But it takes some time before the building industry is sufficiently convinced of the permanence of the higher rents to be stimulated into activity. Moreover, the building industry by its very nature cannot be set going on a large scale suddenly. In a period of building depression many contractors, particularly the smaller ones, have gone into other industrial activities, and the same is true of the skilled workmen. It follows that it takes considerable time to recruit a sufficient number of new entrepreneurs and skilled laborers to develop construction on a large scale. Once expansion is under way, the

construction continues so long as the rents appear favorable. Structures and plans are in process which cannot be completed for many months, and sometimes even years, after it appears that the rent situation, owing to the increasing surplus of available houses, is becoming less favorable. Thus, the adjustment of the supply of houses to the demand for houses takes place with a very considerable lag, and this, it appears, accounts in part for the cyclical movement in residential building.

The fluctuation in rents resulting from the failure of quick adjustment of available housing space to the number of families seeking accommodations is the major cause of the fluctuation. There are, however, other factors which have a bearing on the building cycle, including fluctuations in the cost of building, availability of investment funds, changes in the national income, changes in the rate of urban population growth, and general pessimism or optimism with respect to the long-run future.⁸

Some of these factors are themselves affected by the building cycle itself and, therefore, are in part caused by, as well as causes of, the building cycle movement. Thus, as building construction increases, the cost of building is advanced by reason of activity in the industry. And the ever-mounting cost is itself a factor causing, in part, a cessation of building operations. Much the same may be said about the availability of real-estate investment funds. Moreover, changes in the national income are, in part, affected by the building cycle and often act in a manner to reinforce and accelerate the upswing or the downswing of constructional activity.

As we have already noted, the building cycle on the average is almost exactly twice as long as the major business cycle. It is therefore not true, as has sometimes been suggested, that the building cycle has no relation whatever to the major business

⁸ Cf. J. Tinbergen, *Statistical Testing of Business Cycle Theories, A Method and Its Application to Investment Activity*, League of Nations, 1939; C. F. Roos, *Dynamic Economics*, The Principia Press, Inc., 1934; J. B. D. Derksen, "Long Cycles in Residential Building: An Explanation," *Econometrica*, April, 1940; see also extended bibliography cited in C. D. Long, Jr., *op. cit.*, pp. 9-10.

cycle. On the contrary, American experience indicates that with a high degree of regularity every other major business boom coincides roughly with a boom in building construction, while the succeeding major cycle recovery is forced to buck up against a building slump. In the former case the peak of the building boom usually antedates the peak of the major cycle.

The periods of the six building cycles of the last hundred years are as follows:

TABLE I

	<i>Low</i>	<i>High</i>	<i>Low</i>
Cycle 1	1830	1836	1843
Cycle 2	1843	1853	1864
Cycle 3	1864	1871	1878
Cycle 4	1878	1890	1900
Cycle 5	1900	1909	1918
Cycle 6	1918	1925	1934

The major depressions which coincide with a sharp curtailment in building construction following pronounced booms are as follows: 1837, 1857, 1873, 1893, and 1929. It will be noted that every one of these depressions was of unusual severity and duration. This is precisely what one would expect. If temporary saturation in other forms of real investment coincides with a temporary saturation in investment in building structures, it is reasonable to suppose that the total decline in real investment will be far greater than would otherwise be the case. Moreover, since it takes longer to overcome the temporary saturation in building construction—indicated by the average length of the downswing in the building cycle, eight to nine years—it is not difficult to see that recovery of general investment activity is made more difficult so long as building construction, which has always been such an enormously important industry in American life, is declining or running along on a very low level. Thus, the depressions which have fallen in the interval of the construction downswing are typically

deep and long. And the succeeding recovery is held back and retarded by the unfavorable depressional influence from the slump in the building industry.

With respect to the Great Depression of the thirties, it is worthy of note that the constructional boom of the twenties was the greatest in our history and that the precipitate decline in building after 1928 exceeded that in any earlier period. The only earlier building construction boom which at all approaches that of the nineteen-twenties in magnitude, relative to the then prevailing size of the economy, was that from 1843 to 1853; the subsequent decline was, however, considerably less serious than that experienced in the thirties.

The major depressions which have fallen in the periods when building construction was on the upgrade, or about to revive, are as follows: 1847, 1864, 1883, 1900, and 1920. It is a notable fact that each of these depressions was relatively short in duration and did not fall to any extreme depth. This also conforms with what one would expect. If the depression of the major business cycle occurs at a time when building construction is reviving, it is reasonable to suppose that the decline in general business activity will be cushioned by this fact, and that the moment forces making for revival appear, such forces will be powerfully reinforced and strengthened by the upsurge of building activity. The succeeding business boom is powerfully reinforced by a strong building boom.

There remain two major business cycle depressions which have not been included in the above analysis—those of 1907 and 1913. The 1907 major depression coincides with a downturn in building activity, which, however, was quickly checked. The succeeding level of building activity reached an even higher point than that which had prevailed in 1906. The major depression beginning in 1913 also coincides with a very minor downturn of building construction. As would be expected from these facts, both of these major depressions, while fairly sharp, were relatively short in duration. The recovery after 1907 could not, to be sure, be characterized as a pronounced boom but only as a period of moderate business

prosperity. The recovery after the 1913 depression was, of course, profoundly influenced by the impact of the first World War. The generally sustained high level of building activity during the interval of both these depression periods, however, doubtless helps to explain the fact that both depressions were relatively mild and short lived. It is, of course, true that after the war began building construction fell to a very low level, reaching bottom in 1918. But investment expansion in other directions, stimulated by the vast war exports, caused the pronounced war boom.

It is reasonable to suppose that the most important single explanation for the speed of the recovery from the 1921 depression was the phenomenal upturn in building construction which began in 1921 and which rose to an unprecedented crest in 1925 and remained at an extraordinarily high level until 1928, when a drastic curtailment of constructional activity set in. No explanation of the boom of the twenties or the severity and duration of the depression of the thirties is adequate which leaves out of account the quite extraordinary record in building activity. Probably at no time in our history had we reached as complete a temporary saturation in building construction, including apartment houses, residences, office buildings, and other commercial structures, as was the case in the late twenties. Under these circumstances it was to be expected that it would take a long time to work through this period of oversaturation.

It is thus apparent that it is not possible to give an adequate analysis of the major business cycle (of eight to nine years' duration) without taking account of the impact on that cycle of the longer cycle of building construction. This factor is one of the most profound of the various influences which cause one major business cycle to differ from another. And in this factor we are able to see against the background of earlier American experience a part of the explanation of the severity of the Great Depression starting in 1929.

The role of the construction cycle in the boom of the twenties and the depressed conditions of the thirties is strikingly

revealed when one compares real investment in fixed capital in the high prosperity period 1923-29 with the partial recovery years 1936-39. We include in fixed capital: (1) producers' equipment, (2) plant, (3) housing (including private nonprofit construction), and (4) public construction. The record is as follows:

TABLE II
*Average Annual Real Investment*⁴
(in billions)

	1936-39	1923-29
Equipment	\$4.3	\$4.8
Plant	1.9	3.9
Housing (plus nonprofit)	1.9	5.1
Public Construction	3.3	2.1

Investment in producers' equipment was \$4.3 billions annually in 1936-39, very nearly equal to the annual investment of \$4.8 in 1923-29. Considering the lower price level of 1936-39, the real investment was at least equal to that of 1923-29. The failure to achieve full recovery was not due (at least not to any appreciable extent) to inadequate expenditures on new equipment.

The next two categories reveal clearly where the deficiency lay. Investment in producers' plant amounted to only \$1.9 billions annually in 1936-39, compared with \$3.9 billions in 1923-29. Plant investment was down \$2.0 billions per year. Housing averaged \$1.9 in 1936-39, compared with \$5.1 in 1923-29. The shortage here amounts to the vast figure of \$3.2 billions per annum. Together, private construction of plant and housing ran annually \$5.2 below the 1923-29 level. It is in this area that one must find the explanation for the incomplete recovery of the thirties.

The building cycle which we have been considering is, of course, nothing more or less than just the cycle in the con-

⁴ Data from George Terborgh, *Federal Reserve Bulletin*, September, 1939, and subsequent estimates.

struction of plant and housing. According to our century-old experience with the building cycle, we should expect a slump in housing and in plant construction in the first recovery period following the intense constructional boom of the twenties. From this standpoint we could have expected, quite apart from the war and the defense program, that the major recovery of the forties would have made a more favorable record than that made in the thirties.

The construction areas in which the highest saturation was reached in the twenties were also the areas most depressed in the thirties. Office buildings and housing are leading examples. With respect to railroad plant, it is to be noted that expenditures in this area rose progressively (with a very slight recession in 1925 and 1927-28) to the peak of the boom, and even continued (despite the growing encroachment of trucks) into the depression, reaching the highest point in 1930. Similarly, investment in electric power plant, after a moderate decline from the 1924 peak, rose again in 1929 and even in 1930. Despite a sharp decline in electric power output in 1930, plant capacity was greatly increased. Installed capacity of plant and equipment remained far in excess of current output requirements for several years. Not until the relatively high electric power production of 1936 and 1937 was capacity sufficiently utilized to justify further large capital outlays. Thus, the thirties offer a conspicuous illustration of the prolonged saturation following a high constructional boom—the basic factor in the long building cycle.

The So-called "Long Waves"

But there are still other factors of a long-run character which influence the major business cycle and which help to explain the depressed thirties. Many writers, including Konratieff, Spiethoff, Mitchell, Thorp, Schumpeter, Woytinsky, Ciriacy Wantrup, and others, have noted the important fact that the past experience of the Western world indicates prolonged periods of relatively good times, extending far beyond the boundaries of the major business cycle and even of the

building cycle; and similarly prolonged periods of more or less chronic depression, within which, however, the swings of the business cycle occur. In the long periods of good times it has been noted that the upswing of the business cycle is vigorous and reaches high levels of activity, while the downswing phase is of relatively brief duration and comparatively easily overcome. The long periods of good times are apparently periods in which there is present a strong undercurrent of buoyancy, a powerful upsurge in investment activity, interrupted, to be sure, at fairly regular intervals by more or less severe depressions. In the long periods of chronic hard times, on the contrary, it has been found that depressions are regularly deep and prolonged and that recoveries are weak and anemic and fail to reach a level of reasonably full activity.

Among the characteristics which, from the statistical standpoint, most clearly distinguish these prolonged periods of good times and bad times are (a) secular movements of prices and (b) secular movements of interest rates. Always in the long periods of good times the trends of prices and interest rates are upward, while in the long periods of hard times the secular movements of prices and interest rates are downward. Some writers have sought to find in these phenomena the causal explanation. It is, however, more probable that the movements of prices and interest rates are *indicators* registering the impact of the deeper factors which cause the periods of good times or bad times, as the case may be. They are statistical thermometers, so to speak, registering the fact of prolonged buoyancy or chronic depression.

Attention should be called to the fact that it is scarcely appropriate, as has frequently been done, to speak of these prolonged periods as "upswing" and "downswing" periods. The long periods of hard times, at any rate, do not reveal an absolute decline in production, though they do reveal falling prices and interest rates. The trend of per capita output and real income continues to rise, though probably at a somewhat retarded rate.

The periods of prolonged hard times are regularly associ-

ated with an exceptionally large amount of unemployment. Indeed, much convincing data with respect to these periods are to be found in social and labor history.⁵ The periods of hard times are regularly periods of profound social unrest, of revolutionary movements designed to cure by more or less drastic procedures the social structure which caused or permitted such vast unemployment. A part of the political turbulence of these periods is, to be sure, to be explained in terms of the increasing weight of debt in view of falling prices. To this extent, the movement of the price level must be regarded as, at any rate, an intermediate causal factor intensifying the social and political disturbances commonly encountered in these periods. It is, however, necessary to look deeper into the underlying factors and to ascertain the fundamental causes of the general price decline.

Within these long periods of good times, on the one side, and bad times, on the other, there occur, modified however as indicated above, the more or less regular swings of the major business cycle, the temporary recessions of the minor cycles, and also the more or less regular swings of the eighteen-year building cycle. But since the long periods of buoyant prosperity or chronic depression extend beyond any of these phenomena, there is reason to suppose that there are other factors which have not been fully taken account of in the discussion either of the major and minor business cycles or of the building cycles.

Some writers have referred to these prolonged periods of good and bad times as "long waves." Whether or not it is appropriate to do so cannot yet be established in view of the fact that the record reveals thus far only three such "waves," the last of which is yet incomplete and, indeed, in some respects somewhat obscure. It is a fact, however, that as high a degree of periodicity has prevailed for these three waves as any which we find for the major business cycle. Moreover, it

⁵ See John R. Commons, *et al.*, *Documentary History of American Industrial Society*, A. H. Clark Co., 1910-11; and also John R. Commons, *History of Labor in the United States*, Macmillan, 1918.

is a tenable hypothesis that the process of economic development tends to run not only in terms of the regular business cycle movement, but also in terms of these long waves. Indeed, as also with the business cycle, each phase of these long waves tends, in some measure, though we think less clearly than with respect to the business cycle, automatically to develop into the next succeeding phase.

The dates usually assigned to these periods ⁶ of preponderantly good times and bad times—or “long waves,” if this term is preferred—are approximately as follows:

<i>Good Times</i>	<i>Bad Times</i>
1787-1815	1815-1843
1843-1873	1873-1897
1897-1920	1920- ?

It is interesting to note that in each of the long periods of good times there developed four major recoveries and three major depressions, while in each downswing there occurred two major recoveries and three major depressions. The turning point both at the top and at the bottom of the “long waves” coincides with the turning point of a major business boom or depression. This may be represented schematically as follows: If one measures the average duration of the three complete business cycles which occurred in each of the long periods of good times, one gets the following results: 6.67 years for the major business cycle in the first long period of good times, 8.67 for the second period, and 6.67 for the third. On the other hand, if one measures the two complete major cycles in each of the periods of prolonged hard times, one gets the following

⁶ See J. A. Schumpeter, *Business Cycles*, McGraw-Hill, 1939; A. Spiethoff, “Krisen,” *Handwörterbuch der Staatswissenschaften*, 4th ed., 1923; N. D. Kondratieff, “Die Langen Wellen der Konjunktur,” *Archiv für Sozialwissenschaft und Sozialpolitik*, December, 1926 (translated in abridged form in *Review of Economic Statistics*, November, 1935); W. C. Mitchell, *Business Cycles, The Problem and Its Setting*, National Bureau of Economic Research, 1927, pp. 441-42; S. von Ciriacy Wantrup, *Agrarkrisen und Stockungsspannen*, Paul Parey, 1936; and Alvin H. Hansen, *Economic Stabilization in an Unbalanced World*, Harcourt, Brace and Co., 1932, Chapter VI.

results: eleven years for the major business cycle in the first period, ten years for the second period, and 8.5 years for the third period. Thus, it is evident that on the average the major cycle in the long periods of good times had a duration of 7.3 years, while on the average the length of the major cycle in the long hard times was 9.8 years.

Just as the major business cycle has not always been completely synchronous in the various industrial countries, so also it is not always possible to fit all countries neatly into the intervals designated as long periods of buoyant expansion or prolonged bad times. For the most part, however, the experience of different countries conforms with the periods outlined above. With respect to the current phase, the thesis is perhaps defensible that for the western European countries the economic development from 1920 on justifies characterizing it as the beginning of a prolonged period of hard times. With respect to the United States, however, in view of the high prosperity of the twenties, it is difficult to justify placing the United States in such a category. There is, however, the undoubted fact, of which cognizance must be taken, that the decade of the twenties was preponderantly a period of hard times for agriculture. From the standpoint of employment in urban industry as a whole, the twenties must clearly be characterized as a decade of preponderantly buoyant prosperity. It is possible that the most reasonable classification is to make 1920 the turning point for the European countries and 1929 the turning point for the United States.

On balance, we believe it is a defensible thesis, though certainly not proven, that the basic underlying economic conditions from 1920 were relatively unfavorable, but that special factors growing out of the first World War, along with certain technological developments especially favorable to the United States, differentiate the experience of our country from that of western Europe. Moreover, with respect to certain European countries the underlying unfavorable economic factors were, even in the period of the twenties, in some measure offset by deliberate governmental intervention stimulating economic

activity. Eventually, out of the depth of the Great Depression and the heightened international tension incident thereto, sprang the enormous military expenditures preparatory to the 1939 European War.

Whether or not the future economic development will justify any continuing classification of periods into eras of good times and bad times only the future can reveal. For one thing, the strong impact of governmental intervention in recent decades may vitiate any such classification. On the other hand, it is too early to say precisely what will be the impact of governmental intervention upon even such long-run tendencies as we are here discussing. After the first World War there were those who argued that the intervention of new central bank techniques and other governmental policies made it quite impossible to speak any longer of the movements of the business cycle. This contention, thus far at any rate, appears not well founded, and it may be that we need similarly to postpone any hasty decision with respect to the impact of governmental policy upon longer-run fundamental economic forces related to eras of buoyant prosperity and chronic depression which transcend the shorter movement of the business cycle.

Three major explanations have been offered for these long periods of good and bad times. One runs in terms of technological developments, innovations, exploitation of new resources, and the opening of new territory. This explanation has been advanced notably by Spiethoff, Wicksell, and Schumpeter. A second explanation runs in terms of war. This explanation has been advanced prominently by Ciriacy Wantrup and has also been noted by Kondratieff and Wicksell. A third, running in terms of gold and price movements, has been advanced by Cassel,⁷ Warren and Pearson,⁸ Woytinsky,⁹ and others.

⁷ *Report of the Gold Delegation of the Financial Committee*, Geneva, 1932; G. Cassel, *On Quantitative Thinking in Economics*, Oxford, 1935; Cassel, *The Theory of Social Economy*, Harcourt, Brace and Co., 1923.

⁸ C. F. Warren and F. A. Pearson, *Gold and Prices*, John Wiley and Sons, 1935.

⁹ W. Woytinsky, *Internationale Hebung der Preise als Ausweg aus der Krise*, 1931.

According to the first theory, the periods of prolonged good times are periods in which there is a favorable underlying basis for the growth of real investment in the development of technology, innovations, and the discovery of new resources. In such periods, it is said, the pace of technological progress is accelerated far beyond what may be expected from the usual run of multitudinous inventions, each of relatively small significance. In the long periods of good times quite revolutionary new techniques are introduced which profoundly change the character of the whole economy. In the periods of the prolonged hard times these exceptional technological developments are damped down or run out. The great investment opportunities exploited in the preceding period of good times are now largely exhausted. General technological improvements of a less profound character are, to be sure, going on, gradually raising the productivity of labor and increasing the real income. Indeed, the great technological advance and the vast real investments completed by the end of the long period of good times become the foundation upon which an advancing real income is projected into the succeeding period of preponderantly hard times. The rise in income experienced in this period is a function of the higher productivity of the factors of production achieved by the technical advance of the preceding period, but the preponderance of hard times reveals itself in a marked degree of unemployment and in the failure of the upswings of the major business cycles to reach a condition of full economic activity.

Professor Schumpeter, with his emphasis on the role of innovations, explains the prolonged good times of the first long wave by the emergence of the Industrial Revolution and the first long period of hard times by the readjustments and adaptations necessary once this new structure had become more or less firmly incorporated into the economic system. The second period of buoyant good times he explains by the admittedly new revolutionary technique which perhaps more than anything else has profoundly altered the character of modern industrial civilization, namely, the railroad. There can be no

question that the development of the railroad opened up vast real investment outlets throughout the Western world, and that this gave a continuous upward push to the economy, making every burst of investment associated with the major business cycle a pronounced and strong one and tending to weaken the forces making for depression. In the last quarter of the nineteenth century, however, came a sharp decline in the rate of growth of the railroad industry. The third period of prolonged good times Professor Schumpeter explains by the emergence of the electrical, chemical, and automotive industries. Wicksell, in his famous Chapter XI in *Interest and Prices*, published in 1898, emphasized fundamentally the same technological factors which are heavily relied upon in Professor Schumpeter's explanation. Spiethoff similarly stresses technological developments in his analysis.

The view that these periods of prolonged good times ("Aufschwungsspanne") and bad times ("Stockungsspanne") have been caused by wars has been most effectively presented by Ciriacy Wantrup. According to this analysis, the long periods of good times are basically caused by the vast governmental expenditures relating to preparation for war and the war itself, while on the other side the periods of chronic hard times are caused by the difficult readjustments incident to the sharp curtailment of war expenditures. The best case for this thesis can probably be made out for the first so-called long wave. The long period of the Napoleonic Wars, the vast governmental expenditures which they entailed, and the stimulus which these expenditures gave to the changes in the economic system ushered in by the Industrial Revolution all indicate that the impact of these wars played a very considerable role. Similarly, the sharp curtailment of expenditures, together with the difficult readjustments to a peacetime basis after the whole of western Europe had for a quarter of a century adjusted itself to war conditions, goes far to explain the difficulties of the long period of chronic hard times from 1815 to the middle forties. A much poorer case can be made for this thesis with respect to the second so-called long wave. It is true

that in the "Aufschwungsspanne" (1843-73) there occurred a number of important wars at various intervals, including the Crimean War, the American Civil War, the Danish-Prussian and the Austro-Prussian Wars of the sixties, and the Franco-Prussian War of 1871.

For the "Aufschwungsspanne" of the third cycle also the case for the war thesis seems relatively weak and would have to rely upon the expansion of armament expenditures, since the first World War did not come until the very end of the long period of good times. At all events, there is much force in the contention that the difficulties confronted by countries in western Europe since 1920 were in large measure related to the aftermath of the war.

On balance, it may perhaps be said that, in the "upswing" phase of the first so-called long wave, wars occupied a position of major importance, perhaps equal to that of the innovations introduced by the Industrial Revolution. Each reinforced the other, and it is difficult to disentangle the relative potency of each factor. For the second "Aufschwungsspanne" it appears reasonable to conclude that the major factor was the railroadization of the world and that wars played a relatively minor part, with respect to both the good times and the ensuing period of chronic hard times which followed. For the third period the most reasonable conclusion appears to be that the electrification and motorization of the Western world played by far the dominant role, reinforced toward the end of the period by the first World War, and that for the succeeding period of economic difficulties postwar readjustments played an important role, though it may well be that the adaptation of the economic structure to the innovational developments of the preceding period was of equal significance.

Those who have stressed price factors in the so-called long waves have tended to lay great emphasis upon the effective supply of monetary gold, a function, on the one side, of the annual net additions to the gold stock from gold production and, on the other side, of the increasing volume of trade. Those, like Cassel, who have stressed this analysis have usually

limited their discussion to the period from 1850 to 1913. Cassel calculated the effective gold supply by correcting the monetary gold stock by an index of an estimated rising trend of the physical volume of trade assumed to increase at a compound rate of 3 per cent per annum. He found that the effective gold supply rose from 1850 to the early seventies, fell from the early seventies to the middle nineties, and rose again to 1913. This movement correlates closely with the general movement of commodity prices and also with the dates usually assigned for the second so-called long wave and the first half of the third. According to this type of analysis, the price movements are caused by the gold movements.

Gold production is clearly more or less a result of accidental discoveries and the development of new mining and refining techniques. While these may themselves, to a certain extent, be related to changes in the profitableness of producing gold, they are certainly, in large part, independent developments. In addition, it is quite clear that the fluctuation of gold production is, in part, related to the changes in the price level which alter the costs of gold production and, therefore, the profitableness of producing gold.¹⁰ From this standpoint, gold production may be looked upon as a result of price movements, and not a cause. Thus, the farther prices fall the more profitable it becomes to produce gold, and a progressively increasing stimulus to output develops, so that after prices have fallen a certain distance gold production increases more and more. There is a lag in the cycle of gold production relative to the cycle of prices of about fifteen years. For example, in the period from 1873 to 1920—one complete long cycle of commodity prices from peak to peak—there is a corresponding cycle of gold production, lagged fifteen years, extending through the period from 1888 to 1935.¹¹ Thus, in the period of high prices gold production was discouraged, and this influence continued on for a considerable interval of time. As

¹⁰ Similarly the increased market or legal price of gold in terms of most currencies in recent years has stimulated gold production.

¹¹ Warren and Pearson, *op. cit.*

prices, however, fell from 1873 on, the impact of this decline finally revealed itself in an upturn of gold production about fifteen years later. Similarly, as prices reached bottom in the nineties, the continued stimulus to gold production carried on over a considerable period after prices began to rise. Thus, with a lag of about fifteen years gold production followed the price movement and from this standpoint may be regarded as a result and not a cause of the price movement.

While it is not possible at this point to go into any extended discussion of the theory of money and prices, it may be said that the trend of monetary thinking is in the direction of laying less stress than formerly upon the purely monetary factors and still less stress upon gold. It is clear that the more credit instruments are developed the farther modern money is removed from gold. The development of deposit currency, and also the development of central banking, permits a high degree of variation between the volume of the means of payment and the gold supply. There is no longer any close connection between them. But more than that, the trend of modern monetary thinking runs in the direction of emphasizing the factors which influence fluctuations in total money income rather than factors influencing the constituent elements in the total volume of money payments, namely, the amount of money, including demand deposits (M), and the velocity of turnover (V). If forces are present tending to cause a rise in the money income, the possibilities under modern conditions of increasing the quantity of money regardless of the gold base, or of utilizing any given quantity of money more efficiently through changes in turnover or velocity, are so great that it may within broad limits safely be said that there are no serious limits, from the side of the money supply, to movements of money income. We must look for other factors, notably those affecting the prospective rate of profit, rather than limitation or superabundance of the money supply, to explain secular movements in income and prices.

Thus, if technological developments and innovations tend to favor a rapid expansion in real investment, money incomes

may be expected to rise, and the money supply and its utilization (MV) may be expected to adjust itself to these conditions. If, on the other hand, the underlying technological developments are unfavorable to a rapid expansion of real investment, money income will fail to keep pace with output and the secular trend of prices will be downward. Here again the money supply (M) and its utilization (V) adjust themselves to the demands of the underlying real factors. Still more obvious is the fact that, in periods of vast war expenditures, governments, through radical readjustments in the monetary system, such as the abandonment of the gold standard, adapt the money situation to their own demands. Inflation in wartime has never encountered any limits in terms of the monetary situation. Such limits as have been imposed run mainly in terms of direct price controls and of governmental policies with respect to expenditures and the methods employed for obtaining revenues, whether by taxation or by borrowing. Thus, on balance, we conclude that gold and monetary factors play a subsidiary role and that the main causes of the long periods of good times and of chronic depression must be sought in technological and innovational factors, and at times in greater or less degree in the fiscal policies of governments hitherto related mainly to the conduct of war.

According to the technological and innovational thesis, the electrification and motorization of the American economy dominated the period from the late nineties to 1929. From this standpoint this epoch may be compared with the period of rapid expansion in railroadization from the middle forties to the decade of the seventies. Both of these innovations caused a profound structural change in economic life and institutions. Both relate mainly to speed of communication and transportation. Both opened up enormous opportunities for real investment, not only directly in the railroads, in automobile factories, and in roads, but also in a vast network of underlying and supplementary industries, including for the last period, glass, rubber, steel, cement, electrical appliances, petroleum, and the like. These epochs are clear illustrations

of the profound impact of the rise of quite new techniques giving birth to a range of new industries and expanding and developing old ones into new lines. Both epochs represent a period of rapid growth and expansion. But all new developments finally reach the stage of maturity. Thus, new railroad mileage experienced a rapidly rising trend from the middle forties to the decade of the seventies, and thereafter flattened out with, however, a major spurt in the middle eighties, and eventually in the nineties sharply declined. Similarly, the production of automobiles and the construction of roads experienced a rapid growth into the decade of the twenties. But this rate of growth could obviously not be continued indefinitely. Automobile production gradually reached an asymptotic level after 1923, and the curve of the construction of roads similarly flattened out toward the end of the twenties and thereafter declined.

In the long sweep of technological and innovational developments the decade of the thirties is, therefore, in many respects not unlike the fourth quarter of the nineteenth century,¹² with its deep depressions of the seventies and the nine-

¹² It was in this period, when the railroadization of the country was increasingly reaching a saturation point, that Colonel Carroll D. Wright, Commissioner of Labor, made his famous declaration with respect to the exhaustion of real investment opportunities. Up to that time the central barometer of prosperity and economic activity, of which everyone was more or less consciously aware, was activity in the railroad industry. The declining role of the railroad was, indeed, the most significant single fact for this period and offers the most convincing explanation for the chronic hard times, particularly of the decade of the nineties. Colonel Wright's analysis has attracted, particularly in recent years, widespread attention and received much comment. Some, in view of the tremendous expansion ushered in by the electrification and motorization innovation beginning at the end of the century, have been disposed to criticize his analysis as shortsighted. But others regard his observation as the most penetrating and valid analysis of the economic difficulties of his time which anyone of his generation made. The investment saturation to which he called attention is evidenced by the continued difficulties which confronted not only the United States, but also the countries of western Europe for more than a decade following his lucid exposition of the deep, underlying, real factors in the situation. While others were stressing superficial aspects, Colonel Wright placed his finger upon the really significant cause of the world-wide stagnation.

See U. S. Commissioner of Labor, *First Annual Report*, Government Printing Office, 1886, dealing with Industrial Depressions.

ties. Thus, against the background of earlier experience the decade of the thirties is more understandable.

The early expansion of the railroad served to promote vigorous booms and to cut short temporary lapses into depression. But progressively the railroad reached maturity and eventually ceased to grow. The mere slowing down in the *rate* of growth caused an absolute decline in the volume of new investment required in the plant and equipment of subsidiary industries, such as iron and steel, which manufactured the materials that went into railroad construction. Those who point to the high level of new railroad construction which continued on into the eighties miss the point. It is not enough that new railroad construction should continue at the high level reached. New construction must *continue to rise at a constant rate* if new investment in the underlying, subsidiary industries is to be maintained at the pace set. Thus, the mere slowing down in the *rate of increase* in new railroad construction was already beginning to have a damping effect on the economy long before there was an actual decline in the volume of new construction. This is the important lesson which we learn from the acceleration principle. The sharp decline in railroad construction in the decade of the nineties was a significant factor in that depressed decade.

But now a new era of buoyancy superseded the railroad era—the era of electricity and motorcars. The three decades 1900–29 witnessed the rise of four new giant industries.¹⁸ Street cars led the way in the nineties and reached its investment peak (\$2.5) in the decade 1900–09. Capital outlays on telephones increased rapidly after 1900 and doubled in each of the two succeeding decades, rising to \$2.5 billions in the twenties. Electric power investment first assumed large proportions in the decade 1900–09 (\$1.7 billions), increased 50 per cent in the following decade, and leaped forward with a capi-

¹⁸ I am indebted to John Wilson, formerly instructor in economics at Harvard University and now economist in the Department of Commerce, for the use of data in his unpublished manuscript.

tal expenditure of \$8.1 billions in the twenties. Automobile production, from only 4,000 units in 1900, rose to 187,000 units in 1910, 1,000,000 in 1915, 2,200,000 in 1920, 4,400,000 in 1925, and 5,600,000 in 1929. Garages, repair shops, and service stations multiplied throughout the country. Thus, the automobile industry not only fostered gigantic production plants, largely concentrated in a single industrial area, but also opened opportunities for thousands of small business units located in all sections of the country roughly in proportion to the consuming population. Major subsidiary industries were created or expanded on the tide of the vast purchasing power of the automobile industry, including such giants as Petroleum, Rubber, Glass Plate, and Steel. Finally, outlays on public roads, largely induced by the rise of the automobile, reached the figure of \$9.9 billions in the decade 1920-29.¹⁴

Thus, an era of buoyant prosperity was generated by the growth of four great industries: street railways, telephone, electric power, and automobile industries (including Petroleum, Rubber, and Glass Plate, largely accessory to the Automobile). Also important, but nevertheless dwarfed by the four giants, were the movie, chemical, and electrical equipment industries.

Just as the railroad expansion came to an end, so also the buoyant era of 1900-29. Street railway development was largely completed in the first decade, telephone and automobile expansion in the third decade. Electric power alone remains with large prospects for further growth. The great era of expansion was over by 1930. Thus, the decade of the thirties resembles the conditions in the nineties. Technological developments making for expansion had temporarily spent their force. This does not mean, however, that eras of buoyant expansion are permanently a thing of the past. The progress of technology, we can be reasonably certain, will sooner or later open outlets for enlarged streams of investment in great new industries.

¹⁴ From Temporary National Economic Committee Hearings, Part 1, p. 232.

Structural Changes in American Economy

Thus far we have seen that the decade of the thirties is largely understandable in terms of past experience. But our analysis would remain incomplete if we neglected to consider one important structural change in our economy for which we have no precedent in the past. Always, in the past century, expansion has rested not merely on *intensive* investment arising from technological progress, but also on *extensive* growth—the occupation of new territory and the growth of population. The nineteenth century was a unique era of *extensive* growth.

Approximately in the period of 1915–30, the rate of extensive growth rapidly slowed down. The decennial increment of population growth in northern and western Europe, including the three great powers, the United Kingdom, Germany, France, and the smaller northern and western countries—Scandinavia, Finland, Belgium, Holland, Switzerland, and the Irish Free State—continued to rise, or at any rate did not decline materially until the first World War. The following table (calculated from Kuczynski's *The Balance of Births and Deaths*, p. 9) gives the approximate increases for the *eleven* countries of northern and western Europe referred to above. The period 1913 to 1926 is omitted, since the war abnormally reduced the rate of population growth. The decade 1926–36 may be regarded as representative of postwar normal rate of growth.

TABLE III

<i>Decade</i>	<i>Increase</i>
1883–93	10,290,000
1893–03	14,950,000
1903–13	14,510,000
1926–36	9,468,000

In the United States the decline came later, as shown in the table which follows:

TABLE IV

<i>Decade</i>	<i>Increase</i>
1900-10	16,138,000
1910-20	14,923,000
1920-30	15,901,000
1930-40	9,218,000

In northern and western Europe the turning point came with the first World War. In the United States it came in 1924.

The expansion of Europe into new territory (in terms of both migration and foreign investments) came to an abrupt halt in the first World War and, while resumed in the twenties, did not again attain its former level. In the United States the expansion into the great West was followed by several decades of urbanization; and then we turned (via capital export) on a large scale to less developed countries. This movement ended in the Great Depression. Doubtless, under more favorable political conditions, there is still room for considerable foreign investment in the less industrialized parts of the world, and it may be expected again sooner or later to be resumed on a fairly large scale. But no one is likely to challenge the statement that the era of development and settlement of new territory is largely over. The role of territorial expansion is likely to be much less in the next half century than was the case in the nineteenth century relative to national income.¹⁵

The rapid decline in population growth and the exhaustion of the world frontier may well have a causal interconnection. Certainly it is true that, so long as there were great new territories to be opened and developed, rapid population growth was a healthy economic development. With an increasing exhaustion of opportunities for settlement and exploitation of new territory, the continuation of the nineteenth-century rate

¹⁵ See Isaiah Bowman, *Limits of Land Settlement*, Council on Foreign Relations, 1937.

of population growth would rapidly have given rise to insoluble economic problems.

It is true that the sudden and drastic decline in the rate of population growth so far has affected mainly western Europe, and highly developed industrial countries, such as the United States. It is also true that there are still areas which have a long way to go in the process of industrialization. But just as the rate of population growth in the highly industrialized countries has rapidly declined and in some is approaching zero, so also the possibilities of large outlets for foreign investment by these countries appear meager, in terms of national income and wealth, in comparison with those of the nineteenth century. While it is not possible statistically to measure the rate of decline in investment opportunities with the precision that is possible with respect to population growth, in general the two movements appear to exhibit a somewhat parallel development.

In this connection, it is well to emphasize that the economic frontier of any country must always be conceived of not in terms of its own boundaries, but in terms of the possibility of capital investment throughout the entire world. Thus, Great Britain, despite the fact that her own territory was, of course, from the beginning of the modern capitalist period fully occupied, enjoyed equally with the United States a great economic frontier throughout the nineteenth century. From this standpoint, it is clearly a mistake to speak of the passing of the American frontier as the end of extensive expansion, for after this phase was over, investment abroad played an important role in the general world expansion, and this in turn reacted upon the speed of our own internal development. Moreover, of course, as far as general economic expansion is concerned, it must always be remembered that throughout the era of modern industrialization there are three strands to the process—technological innovations, the development of new territory, and the growth of population. Each has reinforced the other, but at times, when one or the other has slackened, another factor has taken an exceptional spurt. This was nota-

bly true in the United States in the period of electrification and motorization of her economy.

Population growth¹⁶ and territorial expansion opened vast outlets for *extensive* investment of capital. But, it is argued, may not equally favorable opportunities for *intensive* investment take their place? The answer appears to be that in the past we have enjoyed opportunities for *both* extensive and intensive investment. Now *extensive expansion* is largely over, and there remains only the possibility of intensive developments. But intensive investment is not something new. Intensive and extensive developments have proceeded together, each reinforcing the other. New technological developments underlie the nineteenth century of expansion. But population growth and the penetration into new territory, in turn, played an important role in the widening of the market and the development of mass production techniques. Extensive expansion minimized the risks of technological innovations and encouraged bold experimentation. Thus extensive expansion stimulated intensive expansion. On the other side, the pressure to find investment opportunities, in view of the slowing down of extensive growth, will be greater in the future. Industrial research is now far more systematic and more generously financed than ever before.

The era of buoyant prosperity (1844-73), based largely on the railroad, was intimately linked up with extensive growth and expansion. The next buoyant era (1900-29), based on electricity and the automobile, had less to do with mere extensive growth and expansion into new territory, and involved a much more radical transformation in consumption

¹⁶ It has been argued that cessation of population growth should be favorable to employment, since the supply of new workers in the labor market would be reduced. But it is easy to show that population growth, if it occurs in a period of territorial expansion, raises the demand for labor more than it raises supply. Thus, the volume of extensive investment associated with the net addition of one worker involves capital outlays on a house, amounting to, say, \$4,000, and outlays on plant and equipment amounting to an additional \$4,000. Eight thousand dollars of investment represents a far greater effect on the demand for labor than the effect on supply of one additional man-year of labor.

habits and ways of living. This sort of transformation, involving vast investment of capital, can take place without extensive growth, and under the progress of technology we shall doubtless experience again far-reaching revolutionary innovations of this sort. There is, perhaps, inherent in the process of innovation a cumulative tendency which may be described in terms of a geometric progression. That this was true, even of the past century, is at least in part supported by the fact that the percentage rate of increase in per capita real income was approximately a constant. It is, of course, always possible that the rate of technological development may in the future exceed the geometric rate of the past, but here obviously one enters a field of speculation which can be settled only by the actual course of future historical events. It is, at any rate, a question whether intensive investment can attain the buoyancy and tempo of earlier periods when technological developments were stimulated by population growth and territorial expansion.

The decline in the rate of extensive expansion may partly account for the structural change which we are witnessing in economic institutions. The economic order is undergoing progressively changes in its internal organization which affect its functioning and operation—defense mechanisms, they may be, which seek more or less blindly and experimentally to adjust the economy to an era of less rapid extensive growth. These changes are commonly described in terms of a shift from a free market economy to a planned economy.

In the nineteenth century an automatic price mechanism functioned with relatively little intervention or control from organizational influences, whether governmental or private. Each individual unit in the process of production constituted, so to speak, only a small atom, unable to control but instead controlled by the general forces inherent in the price mechanism. And while, particularly from 1870 on, institutional interferences with the automatic functioning of the price system were gradually developing, it is, broadly speaking, true that these played a relatively minor role until the first World War.

Just as wars have frequently acted as a profound stimulus upon technological development, so also the first World War enormously accelerated the development of institutional interferences with the price mechanism. An increasing degree of regimentation by both public and private organization developed with startling rapidity. Instruments of control that had gradually been taking shape were perfected and utilized on a wide scale. This revealed itself in monetary and fiscal policy and also in corporate, labor, and other private control mechanisms.

In a free market economy no single unit was sufficiently powerful to exert any appreciable control over the price mechanism. In a controlled economy the government, the corporation, and organized groups all exercise a direct influence over the market mechanism. Many contend that it is just this imperfect functioning of the price system which explains the failure to achieve reasonably full employment in the decade of the thirties. Some place the blame on corporate price policies, some on trade-union practices, and some on the restrictions imposed by government.

There can be no doubt that these profound changes in institutional arrangements are significant. It is not possible to go back to the atomistic order. Corporations, trade-unions, and government intervention we shall continue to have. Modern democracy does not mean individualism. It means a system in which private, voluntary organization functions under general, and mostly indirect, governmental control. Dictatorship means direct and specific control. We do not have a choice between "plan and no plan." We have a choice only between democratic planning and totalitarian regimentation.

Chapter II

INVESTMENT AND CONSUMPTION, 1920-1939

IT may be well to remind the reader again that we have chosen to follow the common-sense classification adopted by Kuznets in his study of *National Income and Capital Formation, 1919-1935*, and have included in real consumption not only the flow of personal services, nondurable consumption goods (e. g., foodstuffs), and semidurable commodities (e. g., clothing) reaching consumers' markets, but also such durable consumers' goods as automobiles and household equipment. By real investment we mean the flow of production of (a) fixed capital goods, including plant and equipment, residential housing, public construction, and (b) net increases in inventories of commodity stocks held by business firms, whether finished, semifinished, or raw. Real consumption means the annual flow of consumers' goods and services; real net investment means the annual flow of additions to stocks of plant, equipment, and inventories. Together, the annual output of consumption and investment goods constitutes the real income.

The money expenditures made on consumption and investment goods in any given period are the source of the stream of money income received by the society as a whole for the stream of goods and services produced. The money income equals consumption plus investment expenditures. We shall designate the money income (or net income) by the letter Y , consumption expenditures by C , and investment expenditures by I . Thus $Y = C + I$. When the terms "income," "in-

vestment," and "consumption" are used alone, it is understood that they refer to money income and to the money expenditures on consumption and on investment.

For certain purposes it is convenient to use gross investment (I') which includes expenditures on capital replacement (I_r) plus net additions to capital (I). When gross investment expenditures are added to consumption expenditures, we obtain gross income (Y'). Thus $Y' = I' + C$.

It is characteristic of the cyclical fluctuations in the money income that its two component parts—consumption and investment—tend to rise and fall together. But this is a very general statement. We shall want to know more specifically about the *timing* and *amplitude* of these movements.

With respect to timing, it appears that, while investment and consumption fluctuate together, the movements are not entirely synchronous. Kuznets' data show that investment tends to lead, with consumption following. Thus, the recovery of 1921 begins with an increase in investment expenditures. Gross investment rose by \$1.8 billions from 1921 to 1922, while consumption continued to fall (though at a diminished rate) by \$0.7 billions. In the following year both moved strongly upward together. Again, in the recovery of the thirties, investment started up first, rising by \$0.7 billions from 1932 to 1933, while consumption was still falling by \$1.8 billions. In the downturn of 1929 both investment and consumption declined simultaneously. It should be noted, however, that investment fell sharply from 1929 to 1930, while consumption receded by a relatively small amount. This would indicate that also in the downswing consumption tends to follow.

The lead of investment over consumption can be traced (though less clearly) not merely at the turning points of the major business cycle, but also in the minor fluctuations. Thus, there was a minor recession from 1923 to 1924, evidenced by a decline in investment; while consumption continued to rise, though at a reduced rate. In the following year investment leaped forward, with consumption rising but little, indicating

a lag in consumption. In the next year (from 1925 to 1926) investment continued at the high level reached, while consumption (under the stimulus of the preceding year's upsurge of investment) moved strongly forward. Again, it appears that consumption followed investment. Thereafter, both remained high (with some decline of investment in 1928) through 1929.

Thus, the statistical data during the last two decades tend to support the thesis that the active dynamic factor in the cycle is investment, with consumption assuming a passive, lagging role.

The problem is further illuminated if investment and consumption are broken up into various constituent elements. With respect to investment, this involves a number of components, which we shall presently consider. We shall first consider the consumption components.

Consumption is divided by Kuznets into four parts as follows: (a) durable¹ consumers' commodities (automobiles, household equipment), (b) semidurable² consumers' commodities (shoes, clothing, etc.), (c) perishable³ consumers' commodities (food, etc.), and (d) services. In general, it is possible to discern a sequence in the expenditures on these four categories in the order mentioned. But the most pronounced lead is that of durable consumers' commodities over the other three combined. Because of this definite lead it will be useful for our purposes to concentrate upon a twofold classification of consumption expenditures: (a) durable consumers' commodities, and (b) "all other" consumers' goods (commodities and services).

Expenditures on durable consumers' goods increased over \$600 millions from 1921 to 1922, while the outlay on "all other" consumers' goods decreased nearly \$1,400 millions. In

¹ "Durable commodities" include those whose use ordinarily extends over three years.

² "Semidurable commodities" include those ordinarily used less than three years, but more than six months.

³ "Perishable commodities" include those whose use ordinarily extends over less than six months.

1923 expenditures for both rapidly increased. In 1924 expenditures for "durables" remained at the level of 1923, while "all other" moved strongly upward. In 1925 "durables" moved up, while "all other" remained about stationary. In 1926 "durables" held the new level, while "all other" again shot up. Thereafter, the fluctuations around the high level reached were relatively small through 1929. Thereafter "durables" began a sharp decline, with "all other" responding more sluggishly to the general downswing. In 1933 "durables" made a small step toward recovery, while "all other" continued to decline. Thereafter, both rose until 1937. The lead of "durables" over "all other" can be seen in Chart 1 (Kuznets' data).

In general (see Chart 2), the turning points in the fluctuations of durable consumers' goods expenditures synchronize fairly closely with outlays on producers' equipment. Durable consumers' commodities bear a resemblance to producers' equipment in several important respects. They require an investment of funds during the interval in which they are used. Moreover, since they have a durability which is not rigorously fixed, it is possible to postpone the purchase of a new unit, if necessary, beyond the normal period of use. On the other hand, the purchase of perishable commodities⁴ cannot readily be postponed without great inconvenience and a serious decline in consumption standards. Further, durable consumers' goods, like producers' equipment, are subject to obsolescence in the event that new innovations are introduced. Finally, since they are durable, it is possible to buy them on credit by permitting the seller to retain title until the last installment is paid.

In all these respects, durable consumers' goods resemble producers' equipment, and, indeed, investment goods in general; and, from a strictly logical standpoint, they might well be included in the investment category.⁵ This procedure,

⁴ This, however, does not apply to luxuries, the purchase of which is also postponable.

⁵ This Kuznets has, indeed, done in his Variant II classification. See pp. 34-39 in *National Income and Capital Formation, 1919-1935*, National Bureau of Economic Research, 1937.

'Durables'
Billions of
dollars

'All other'
Billions of
dollars

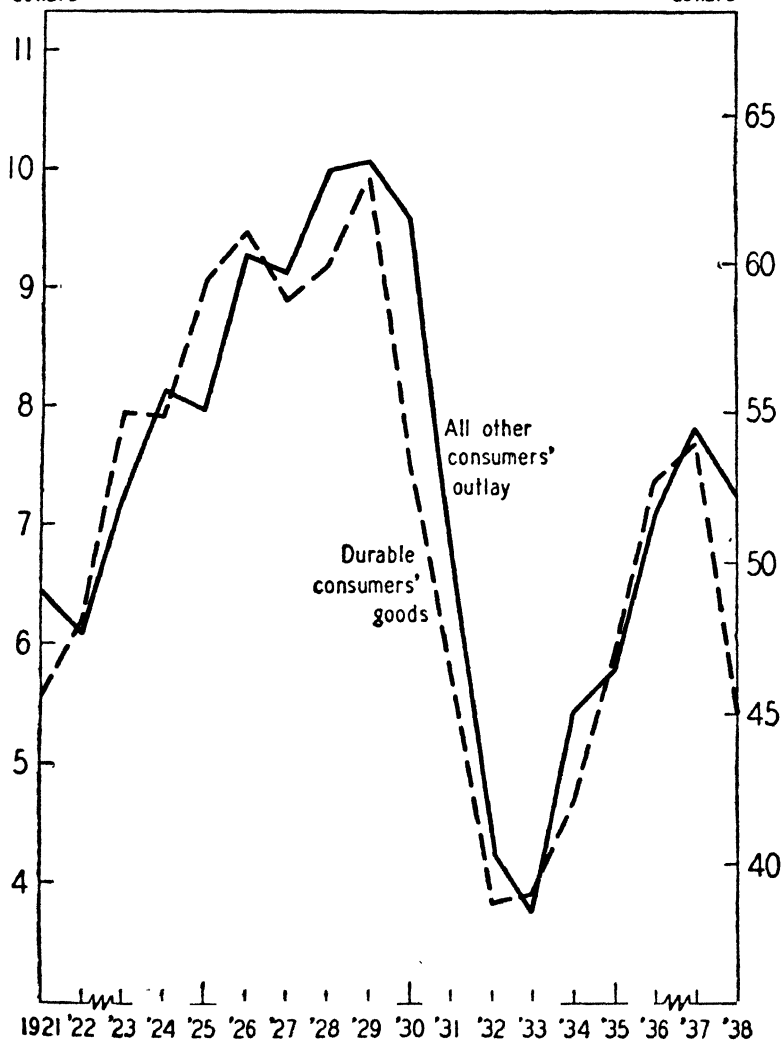


Chart 1.

Durables
Billions of
dollars

Producers'
Billions of
dollars

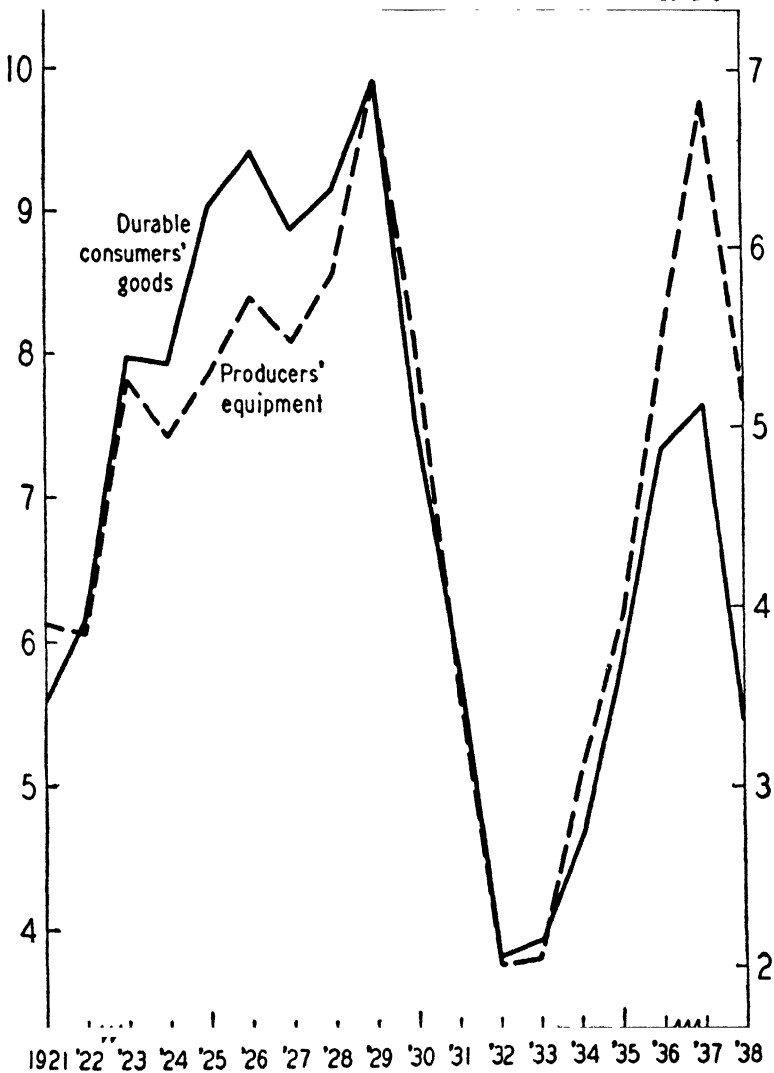


Chart 2.

however, would require the calculation of an imputed "rent" from these goods, to be included as a part of consumers' outlay, just as is done with respect to housing. But such procedure is rather artificial and is contrary to actual practice. It is therefore preferable, everything considered, to follow a common-sense classification and include the durable consumers' goods in consumption, recognizing, nonetheless, that they do constitute a peculiar category resembling, in many respects, investment goods.

We turn now to an examination of the various categories of investment goods and the timing of expenditures on each of these in the different phases of the cycle. We shall discover that, while investment as a whole leads consumption in both recovery and recession, this is not true of each of the components; and, indeed, some components do not exhibit a consistent behavior from one cycle to another.

Inventories play an important role, especially in the lower turning point. Thus, if we consider producers' goods (plant, equipment, and inventories) as a whole, we find that this series regularly leads consumption. But if we divide producers' investment goods into two categories: (a) fixed capital (plant and equipment) and (b) inventories, we discover some diversity of movement from cycle to cycle. Thus, in the upswing of the twenties there was an increase in both fixed capital outlays and inventory outlays from 1921 to 1922. In the thirties' upswing, however, the outlays on plant and equipment from 1932 to 1933 remained approximately stable. The large liquidation which had been going on in inventories since 1930 reached the maximum in 1932 and declined sharply in 1933. Thus, the \$3.1 billions investment (gross) in plant and equipment in 1932 was offset by \$2.4 billions *disinvestment* in inventories, while in 1933 the \$3.0 billions fixed capital investment was offset by only \$1.1 billions *disinvestment* in inventories. Total producers' investment, therefore, was only \$0.7 billions in 1932, but increased to \$1.9 billions in 1933. It was the *diminished disinvestment* in inventories which accounted for the increase in total producers' investment and

which gave the upward stimulus, as far as business expansion was concerned, to the revival of 1933. Thus, the mere cessation of inventory liquidation (or indeed slowing down of the rate) may initiate the revival, provided other investment expenditures streams have reached substantial stability.

Inventories regularly play an important role in helping to initiate the upturn. But inventories, as we have already seen, do not continue to accumulate through the whole major cycle upswing. At intervals of from three to four years' disinvestment of inventories takes place, and the ensuing temporary damping of the upswing constitutes the so-called minor recession. During this interval investment in plant and equipment frequently holds approximately the level reached but fails to advance further. After this temporary "pause," inventory stocks again rise, and investment in plant and equipment moves on to still higher levels. These interrelations may be seen in detail in Chart 3.

We have already noted that investment in producers' fixed capital contributed to the upswing in the 1921-22 turning point, but scarcely maintained itself in 1932-33. We must now consider the constituent parts of producers' investment goods: (1) equipment and (2) plant.

From 1921 to 1922 outlays on equipment decreased from \$3,926 millions to \$3,848 millions. From 1932 to 1933, however, there was a slight increase from \$2,019 millions to \$2,051 millions. Thus, equipment expenditures contributed to the revival in the 1932-33 turning point, but not in 1921-22. The changes are small and Terborgh's data are somewhat at variance with those of Kuznets. On balance, investment in equipment appears to play no significant role in the turning points.

Outlays on producers' plant in all forms of enterprise as a whole contributed \$597 millions to revival in the 1921-22 turning point, but declined \$161 millions from 1932 to 1933. With respect to the various fields,⁶ investment in manufacturing and mining plant moved sideways (declined very slightly) in both turning points. Railroad plant outlays declined in

⁶ See Terborgh's data, *Federal Reserve Bulletin*, September, 1939.

Billions of
dollars

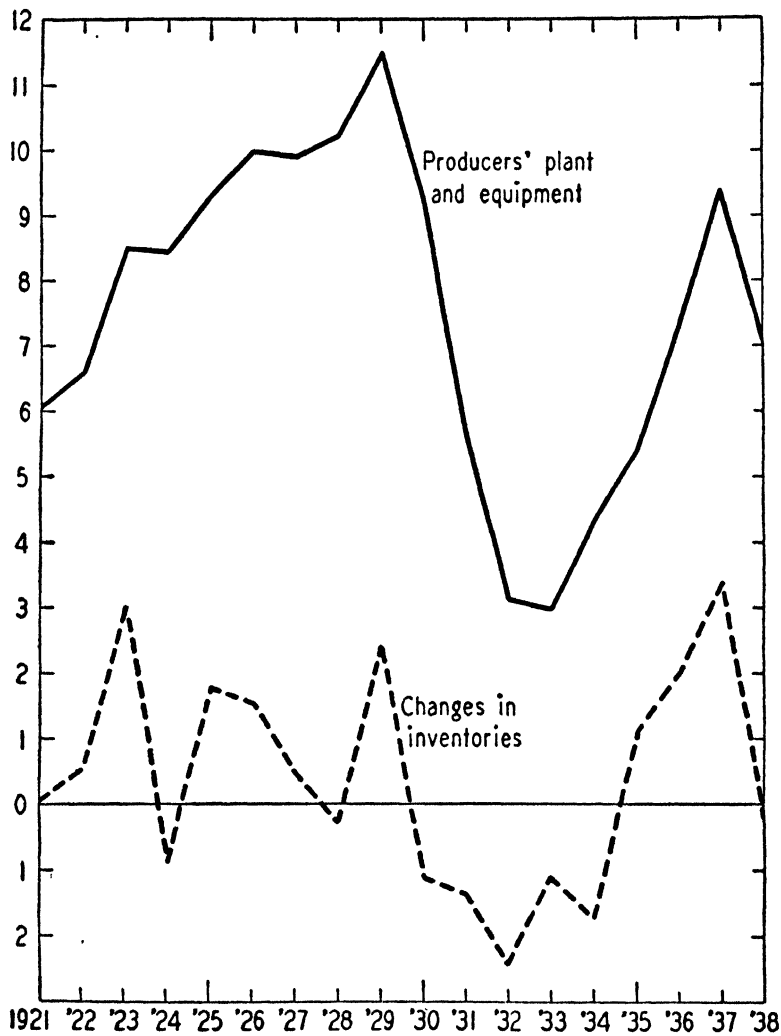


Chart 3.

both, while for other public utilities combined investment in plant contributed \$173 millions to revival in the 1921-22 turning point, but declined by \$166 millions from 1932 to 1933. Commercial and miscellaneous plant outlays contributed \$45 millions to revival in 1921-22, but declined by \$133 millions from 1932 to 1933. Investment in agricultural plant aided revival (about \$30 millions) in both turning points.

Investment in housing (Chart 4) played by far the most conspicuous role in the upturn from 1921 to 1922, the increase being \$1.3 billions over the 1921 level. Outlays on housing rose year by year, until a peak was reached in 1925 at \$5.2 billions. Receding slowly from this high point, the volume of capital expenditures on housing continued annually above the \$4.0 billion level through 1928. The drastic decline from 1928 to 1929 of \$1.2 billions undoubtedly exerted a heavy downward pressure upon the whole economy and contributed largely to the general collapse which started in 1929.

But, while investment in housing led the recovery in 1921-22, it lagged far behind in 1932-33. This behavior accords with a long experience already discussed with respect to the cyclical behavior of residential building. In view of the familiar eighteen-year construction cycle, every other major recovery is usually led and reinforced by housing construction, while the intervening major recovery is compelled to move forward under the handicap of a slump in residential building. A similar analysis applies to the construction of producers' plant, the second main constituent (the third being public construction) in the building cycle. As will be seen in Chart 5, outlays on producers' plant led (though far less vigorously than housing) in the 1921-22 turning point and strongly supported the recovery clear up through 1929. Plant investment, however, lagged behind and continued depressed throughout the recovery of the thirties in a manner closely corresponding to the behavior of housing.

Chart 6 discloses the role of construction as a whole (including producers' plant, residential construction, and public construction) in the two major cycles 1921 to 1938 relative to that

National income
Billions of
dollars

Housing
Billions of
dollars

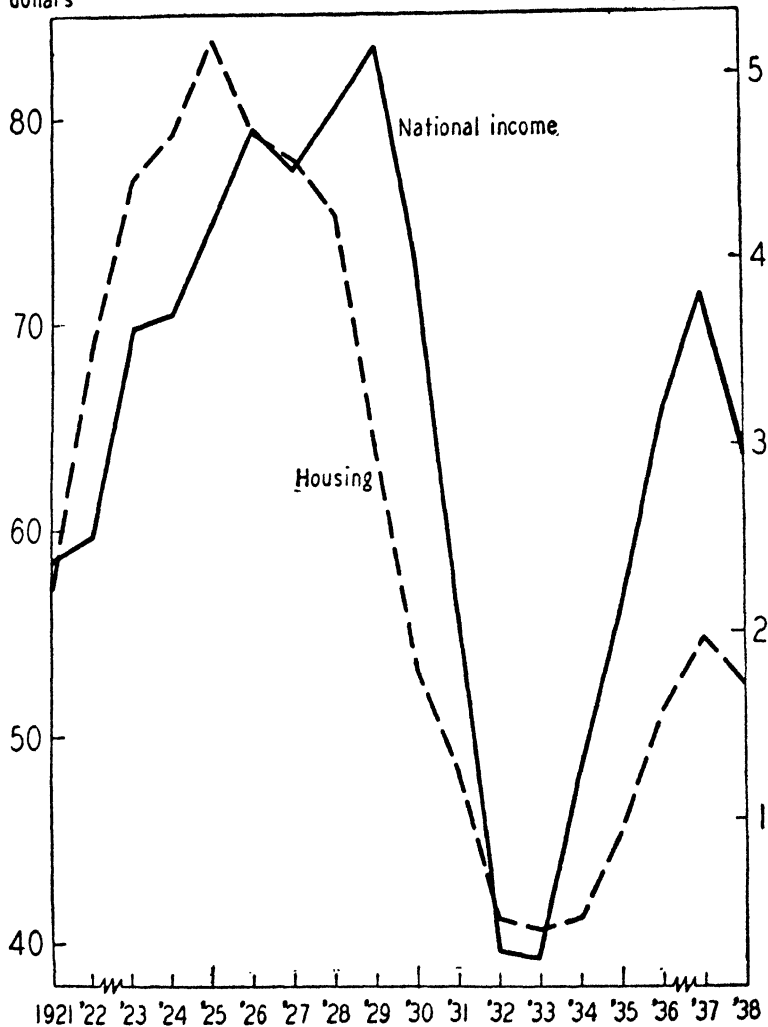


Chart 4.

National income
Billions of
dollars

Plant
Billions of
dollars

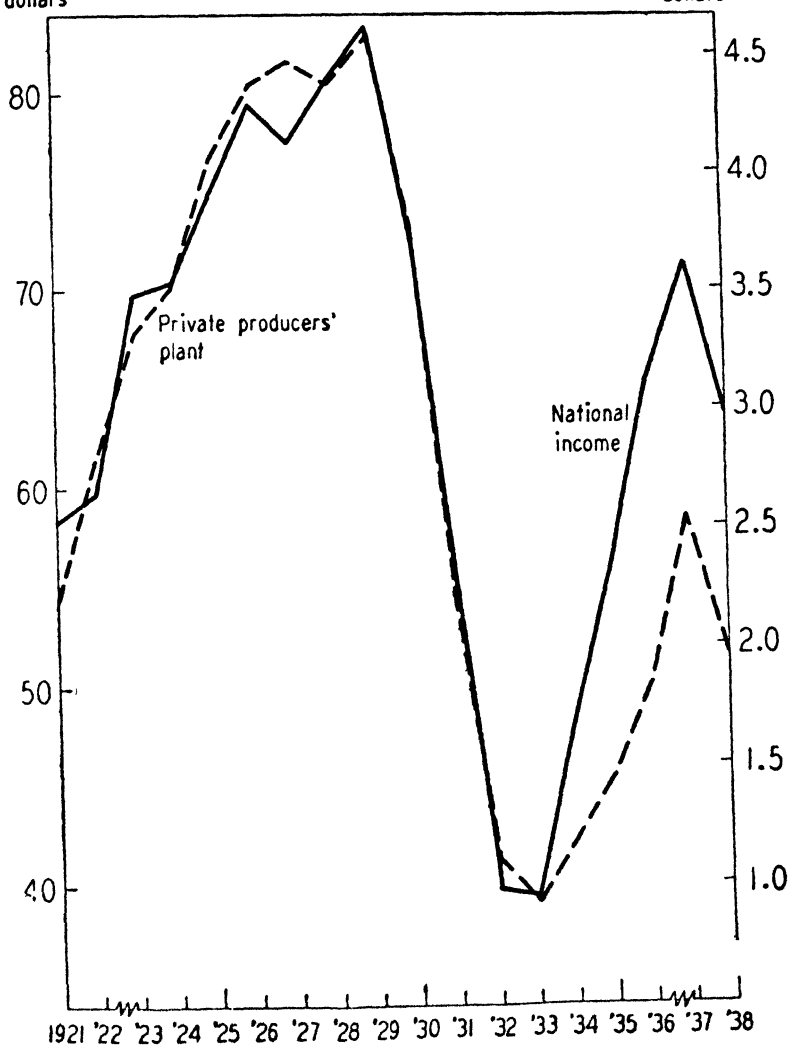


Chart 5.

played by investment in producers' equipment. It will be seen that construction led in 1921-22 and lagged in 1932-33. Equipment outlays recovered in 1937 to a point higher than any of the years 1923 to 1928, and only slightly below that of 1929. Substantially, it is correct to say that equipment made its full contribution to recovery in the thirties, while construction failed. It is reasonable to suppose that the eighteen-year building cycle accounts in considerable measure for the differential behavior of construction in the twenties compared with the thirties. In addition, the decline in the rate of population growth was an important contributing factor. The increment of growth in urban population was about two million per annum in the twenties, while it was well below one million in the last half of the thirties.

We are now prepared to make a general survey of the relative cyclical movements of the various components of investment and consumption, which together determine the flow of income. First, it must be noted that construction may or may not lead the way to revival. It may promote recovery, as in the twenties, or act as a drag upon full recovery, as in the thirties. Secondly, outlays on equipment synchronize quite closely with the fluctuations in national income. Thirdly, inventory investment plays consistently an important role in the initiation of revival. Unlike investment in plant and equipment, however, inventory investment does not progressively sustain the recovery during an entire major upswing. On the contrary, the upswing is checked, at intervals of three to four years, by disinvestment in inventories, or a decline in the rate of accumulation. It is this ebb and flow of inventories which apparently dominates the so-called minor cycle. Fourthly, with respect to consumption components, durable consumers' goods alone appear to play an active role in the cycle. Next to inventories—construction is here disregarded, since it does not play a *consistent* role in all cycles—consumers' durables, especially automobiles, are of major importance in initiating revival. Depreciation and obsolescence doubtless are important factors in the behavior of outlays on durable consumers' goods.

Billions of
dollars

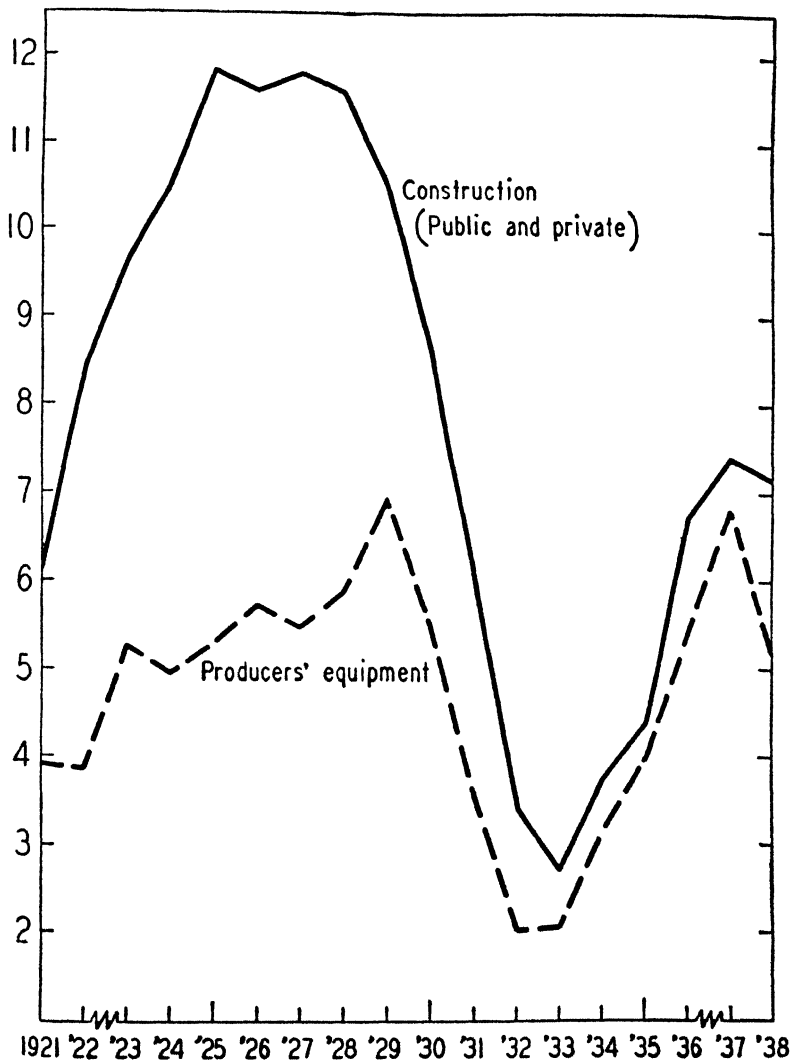


Chart 6.

Moreover, the progressive retirement of consumers' installment debt releases a stream of purchasing power which now becomes available for expenditure on new automobiles, radios, electrical appliances, and other household equipment.

Thus, in the absence of the construction stimulus, which frequently, but not always, plays an important initiating role, inventories and consumers' durables initiate the revival. The upward movement is heavily reinforced by outlays on equipment and (to a greater or less degree, according to the position of the building cycle) construction. These expenditures combined generate new income, and rising incomes in turn induce an increase in consumption expenditures. Such, in broad outlines, is the sequence.

Expenditures on investment goods and on durable consumers' goods lead, and all other consumption expenditures follow. The former is active, the latter passive. Nevertheless, the relationship is more complex than is indicated in this statement. There is continuous interaction between investment and consumption. This interaction is known as the cumulative process. A rise in investment induces an increase in consumption, and this in turn tends to induce an increase in investment. Thus, once an initiating impulse has started the income stream in an upward or downward direction, the movement tends to continue for a time, until the cumulative process has spent itself.

While much investment is spontaneous, a considerable part is induced by the increased draft on plant and equipment incident to a rise in income. And while the increase in consumption (especially the nondurable part) from the bottom of a depression follows the lead of investment and is for the most part induced, common experience makes it clear that some increases in consumption are doubtless spontaneous, or, in other words, not caused by an increase in income. Thus, new types of products, even in perishable commodities, and new types of services may cause some increase in consumption, even though there has been no prior increase in income. But this is relatively unimportant. For the most part, spontaneous

expenditures—expenditures not caused by a prior rise in income—are likely to be made on investment goods or upon durable consumers' goods, but not upon other forms of consumption.

It does not follow, however, that all investment is spontaneous. Much of it is, in fact, induced. It is, however, quite

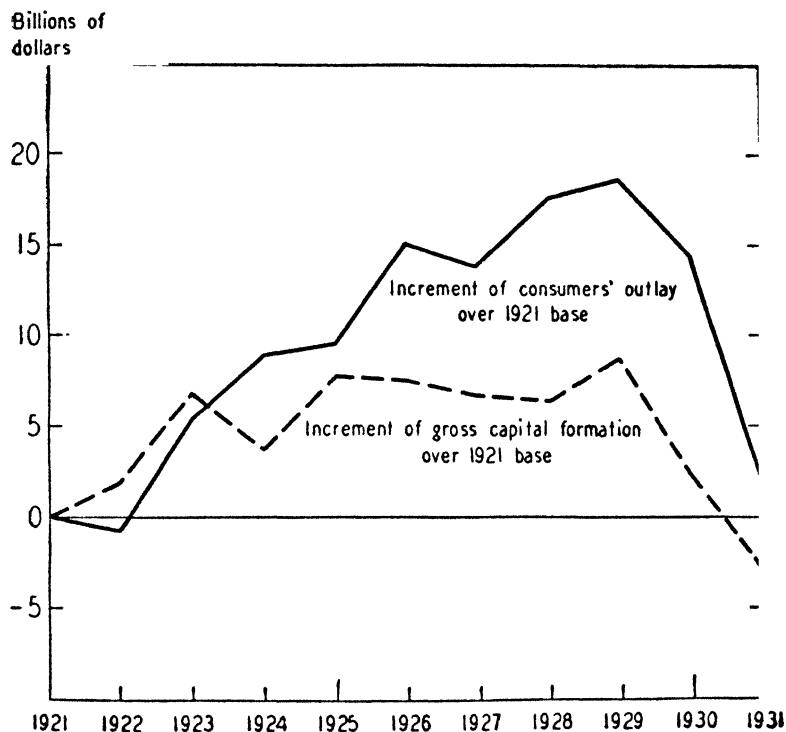


Chart 7.

impossible to determine statistically what part is spontaneous and what part is induced.

Chart 7 compares the absolute increments of fluctuations from the 1921 level of (1) investment and (2) consumption for the period 1921 to 1931. The lag of consumption behind in-

vestment we have already referred to above.⁷ The chart indicates that a continuous flow of investment progressively induces an advancing volume of consumption, until the upper turning point is reached. The more technical aspects of the interconnection between investment and consumption are treated in Chapter XII, dealing with the "leverage" of spontaneous investment, induced consumption (multiplier principle), and induced investment (principle of acceleration).

Percentage-wise, investment fluctuates very much more than consumption. But since investment is a very much smaller part of the total income, the rise and fall in absolute terms is less. From the bottom of the depression in 1921 to 1929 gross investment expenditures rose by \$8.8 billions, while consumption expenditures (including durables) rose \$18.7 billions. The ratio of increase in investment to increase in consumption was as 1.0 to 2.2. From the 1929 peak to 1932 investment expenditures fell by \$17.2 billions, while consumption fell by \$29.3 billions, the ratio being 1.0 to 1.7. From 1932 to 1937 investment rose by \$14.4 billions, while consumption rose by \$18.4 billions—a ratio of 1.0 to 1.3.

The extraordinary increase in investment relative to the increase in consumption from 1932 to 1937 was, however, in large part due to the extreme fluctuation in inventory holdings. Inventories had been heavily deflated by 1932 and had accumulated to high levels by 1937. More significance attaches, probably, to the absolute increments or decrements of investment in fixed capital relative to absolute changes in consumption. Gross investment in producers' equipment, plant, housing, and public construction combined increased by \$7.4 billions (\$7.3 according to Terborgh) from 1921 to 1929, and by \$8.8 billions (\$7.0 according to Terborgh) from 1932 to 1937. Thus, we may conclude that the ratio of the increase in fixed investment to consumption was approximately the same in the two upswing periods. The increase in producers' plant and equipment from 1921 to 1929 was \$5.4 billions according

⁷ This lag would be all the more pronounced, as we have seen, if we had excluded "durables" from consumption and included them with investment.

to Kuznets, and \$4.9 according to Terborgh. For 1932 to 1937 the figures are \$6.3 billions (Kuznets) and \$4.8 billions (Terborgh). Thus, again, the ratio of increase in producers' capital outlays to increases in consumption was approximately the same in the twenties and in the thirties. When all forms of investment are included, however, it is clear that the increase in consumption was relatively smaller in relation to increases in investment from 1932 to 1937 than had been the case from 1921 to 1929.⁸

⁸ Throughout this chapter, including the charts, the data used are Kuznets', unless otherwise stated.

Chapter III

MONETARY POLICY IN THE DEPRESSION

INCREASING use of the term "Public Policy" indicates a change in the role of government in modern economic life. It is, of course, nothing new that a governmental policy is more and more coming to the fore. The tradition of *laissez faire*—never, in fact, fully applied—so dominant in the first half of the nineteenth century increasingly gave way to an ever-expanding measure of governmental control and intervention. But governmental control in the last half of the nineteenth century, and indeed up to the first World War, assumed almost exclusively the form of (a) regulation of the competitive process under which it was sought to check monopoly tendencies and to maintain, to the utmost possible degree, protection, on the one side, to consumers and, on the other side, to free and independent producers from organizational interferences with the functioning of the price system; (b) protection to labor in the form of minimum standards of work, including regulations with respect to hours, working conditions, and to a much lesser extent wages; (c) general efforts at social betterment, including protection to the public health, provision for recreation principally through parks and playgrounds, and a broad extension of public education; and (d) minimum provision for relief of poverty and old age. The latter, to be sure, just before the first World War was rapidly being extended in England through the development of old-age, unemployment, and health insurance, and it had for several decades past become an accepted part of social policy in vari-

ous continental countries, notably Germany, Denmark, Belgium, and Holland. Only in the United States was this expansion of public welfare activities of the state postponed and delayed until the exigencies of the Great Depression forced upon a reluctant public the necessity of these measures.

(With respect to the business cycle, not until the postwar period was there any serious thought of governmental intervention and control.) Indeed, not until the publication of Wesley Mitchell's *Business Cycles* in 1913 was there any general awareness of the business cycle problem as such. Businessmen, of course, had experienced crises and depressions, some of them, as in the seventies and nineties, long and deep. But these were always regarded as disasters, something quite pathological—interruptions to a normal state of business prosperity. Some indeed, like Veblen, impressed by the chronic depressed conditions of the last quarter of the nineteenth century, had come to regard depressions as the normal condition of the modern economy. But this view was an exception to the rule. That the cycle of prosperity and depression was something which normally could be expected to recur with more or less regularity, each phase containing within itself the seeds of the succeeding phase of the cycle, was nowhere generally accepted by the public, nor even for the most part by economists, until the advent of Mitchell's great book. Rarely, indeed, has the central thesis of any book become so much an accepted part of the thinking of an entire society. Henceforth, neither prosperity nor depression was regarded as normal in the modern economy, but instead the cyclical progression from one phase to another was accepted in a quasi-fatalistic manner as a characteristic feature of the functioning of the modern economy.

Monetary Control Inadequate

Attention was at once centered, however, upon the possibility of minimizing the fluctuations of the cycle. A number of more or less accidental developments directed this type of

thinking, notably in the United States, toward monetary control as the means to that end. In the first place, the United States had just before the war instituted for the first time in its history a centralized control over the money and credit supply through the establishment of the Federal Reserve System. In the second place, traditional economic thinking in the Anglo-Saxon world, both England and America, had laid large, though not exclusive, emphasis upon money and credit as a fundamental cause, or at least a controlling factor, in the business cycle. Already in England as far back as the eighteenth century it had been thought that a reform in the Banking Act would eliminate the disrupting crises which periodically shook the financial and industrial structure. Disillusionment, to be sure, quickly followed this experiment and the problem was superseded by others which proved more pressing during the remainder of the century.

English economic literature, with notable exceptions, such as the writings of D. H. Robertson, had mainly stressed monetary aspects of the cycle. Not until the postwar period was the Anglo-Saxon world impressed with the penetrating analysis running in terms of investment and saving, which had long been current on the Continent, starting with the great work of Tougan-Baranousky and Spiethoff.

(The Continental writers who had found the deeper causes of cyclical development in the factors underlying economic progress—technical innovations, the discovery of new resources, the opening up of new territory, and the growth of population—had tended to minimize the role of institutional factors, including money and credit. The investment theories of the cycle had an essential kinship with the doctrine of natural law in economic life and economic development. Institutions were regarded as results and not causes of the process of economic change, rooted essentially in the progress of technology. If the violence of the cycle were to be toned down, this it was thought would, if it ever came, be the result of a damping down of the extensive expansion of the economy in terms of growth of population and the occupation of new ter-

ritory. Thus, Spiethoff believed that the violence of the cycle was a function of the highly dynamic nineteenth century, with its rapid rate of extensive expansion and of economic progress. (The cycle was regarded as a manifestation of the extraordinarily rapid growth and transition from a rural economy to an urban, industrialized economy and of the expansion of modern industry into all parts of the globe. Once the process of industrialization and territorial expansion was completed, it was thought that the powerful ground swells throwing up the periodic tidal waves of economic activity would increasingly come to rest and the fluctuations of economic life would approach greater and greater stability.

Robertson's views especially bear, in many respects, a resemblance to those of Spiethoff. But, in general, considerations such as these were not incorporated in Anglo-Saxon thinking. In the English-speaking world the monetary and financial institutions were stressed, and from this point of view it was not unnatural that the fluctuations of the cycle should be regarded by many as easily amenable to control.

Preoccupation with fluctuations in prices and the monetary causes of these fluctuations contributed to this approach to the problem. The work of Irving Fisher and Kemmerer on the quantity theory of money and prices and the attempt at statistical verification of this theory had attracted widespread interest and attention. Moreover, the war upheaval and the price disturbances to which it gave rise concentrated attention upon the problem of price stabilization. The fluctuation of prices and the business cycle became almost synonymous. The establishment of the Federal Reserve System, the unique position occupied by the United States with respect to the world's gold supply, and the postwar uncertainties with respect to price movements inevitably pointed to monetary stability as the problem par excellence of the postwar period.

The relative success of price stabilization in the decade of the twenties, in view of the importance attached to this problem, diverted attention away from the more deeply significant developments of the decade—the developments in the

field of real investment. Because of this diversion of interest and attention and the importance attached to monetary and price factors, the coming of the Great Depression was not only not anticipated but appeared to be quite inexplicable. Indeed, from the monetary and price standpoint, no satisfactory explanation of the depression was possible, and as the depression deepened the more ardent adherents of the monetary school persisted in the view that the mere multiplication of currency by the central banks would have prevented the depression, and that even then all that was required to restore full economic activity was vigorous monetary expansion and price reflation. That the prosperity of the twenties was, at bottom, an investment boom, and that the depression was inevitable once the investment outlets of the postwar period had temporarily become saturated, was in general not recognized by monetary theorists,¹ though many businessmen close to the facts saw quite clearly the real nature of both the boom and the depression.

✓ The monetary theory of the cycle held that the road to stability lay mainly through price stabilization. If a price-inflated boom could be prevented, the succeeding depression, it was believed, could be averted. When the boom manifested no price inflation, as in the twenties, other monetary and financial factors, such as the rise of debt, were introduced to explain the initiation of the deflationary process which, it was believed, could alone be stopped by monetary measures. And when monetary action was at long last undertaken, it was always charged that either it had been undertaken too late or that it had not been pursued with sufficient vigor.

It is, moreover, of interest to note that the monetary approach, so popular in the twenties, invaded even the camp of the investment cycle theorists, or, at any rate, one section of this school—the Viennese group led by Mises and Hayek. Granted that the expansion of investment was the underlying

¹ My own book, *Business-Cycle Theory*, published in 1927, emphasized non-monetary aspects of the cycle, and stressed the rate of investment, especially in Chapters IV and VIII.

basis of the prosperity phase, it was argued that if the investment boom were held in check by monetary methods and were restrained within the limits of such investment as could be financed from the flow of voluntary saving, the subsequent collapse could be averted. Others, agreeing that the important thing was to slow down the spurt of investment, argued that if you lop off the top of the investment bulge, the investment thus abstracted from the boom would subsequently fill up, in part, the succeeding depression gulch. Thus, stabilization meant a leveling out of investment activity. It was not expected that the high activity of a boom period could for long be maintained, but rather that stabilization would involve an averaging process, leaving the level of activity somewhere between the peak of the boom and the bottom of the depression. It was suggested that this leveling process could be accomplished by monetary action which would knock an excessive investment boom in the head. Thus, until the Great Depression, attention was peculiarly centered on the boom phase as the period which required restrictive action. (The central basis of stabilization policy rested upon the firm belief that the boom was the progenitor of the depression and, if it could be controlled, stability would result. It would not do to wait until depression was already upon us to introduce control measures. The time for action was in the preceding phase of the cycle. Once the boom had been allowed to run its course, depression was regarded as inevitable and it, in turn, would perforce have to be permitted to run its course. Preventive, not remedial, measures were required.)

The events of the Great Depression have profoundly shaken the foundations of this type of analysis. Question is raised whether the monetary weapons designed to check an excessive boom do not inevitably, once they are applied with sufficient vigor to become effective, start a cumulative downward spiral. Lopping off the boom will not automatically fill up the depression gulleys. (The monetary weapons can, indeed, be applied effectively to check an expansion.) But if the factors making for expansion of investment are vigorous, the mone-

tary brakes have to be applied with great rigor in order to choke off the highly alluring speculative ventures which are driving the economy on toward the boom. If the discount rate is to be raised sufficiently high to choke off the new developments which are the driving force of the investment boom, the more stable segments of the economy will be choked off by a degree of contraction quite incompatible with the aim to level off and stabilize.

Elsewhere, the view gained ground that there was nothing inherently wrong about the boom itself; indeed, the boom was regarded as highly desirable per se, not only because it offered full employment and a high level of income but also because it equipped society with new productive forces. The aim of public policy should be, it was now argued, not to choke off the boom but to maintain it at its high level. Obviously, to do so would require, as the continued investment in more and more capital facilities progressively brought nearer the prospective fall in the marginal efficiency of capital, either a lifting of consumption expenditures to fill the gap of the receding investment expenditures or else the expansion of investment expenditures through governmental measures or by a public investment program.

The feasibility of such action would obviously depend, in large measure, upon the magnitude of the gap to be filled. If the propensity to consume is high, the gap to be filled by investment expenditures to secure full employment and to maintain activity at a full-income level would be relatively small. Attention was accordingly shifted away from leveling down the top to leveling up at the bottom of industrial fluctuations. The problem became essentially not one of cracking the boom but of fitting a fairly high bottom to the depression. What was to be feared was not the boom, but the terrific shock of a drastic fall in income and employment from which the economic organization could only with the greatest difficulty recover.

(All through the decade of the twenties economic policy was directed at the dangers of an excessive boom characterized

mainly in terms of price and credit inflation. Preventive measures of a monetary character were deemed adequate. Thus, countries all over the world were caught unprepared to deal with the problem of checking the cumulative fall of investment and income once the decline set in. Had great industrial nations in the twenties concerned themselves not so much with the alleged dangers of a boom, but rather with instruments of control designed to check the depression at a relatively high income and employment level, the history of the decade of the thirties in terms of both economics and world politics might have been very different. The decade of the thirties has taught us the lesson that we cannot afford at whatever cost to permit the national income and the volume of employment to fall below a tolerable level. 7

With respect to this central conclusion there can probably be little difference of opinion. Opinion will diverge as to what the tolerable level is, below which at all costs the economy must not be permitted to fall. Some will wish to set the goal high and will wish to achieve continuously an approach toward full employment. Others will wish to minimize the role of government policy to the more modest aim, not of achieving continuously full employment, but of preventing the economy from falling below the assigned level.

The less ambitious goal has much to recommend it. In the first place, it fixes a limit to the role of governmental policy. In view of the magnitude of the problem involved, it is clearly a more manageable and realizable goal. It interferes less with established institutional arrangements and leaves to the functioning of free enterprise itself the problem of fuller employment beyond the minimum level. In a manner, it thus divides the field between governmental activity and the activity of private enterprise. It becomes the function of government to establish a minimum below which the health, continuity, and workability of the economic system is endangered, and indeed the workability of government itself and particularly of international political relations. If a reasonable bottom had been put to the Great Depression throughout the world, either

by the action of each of the more important industrial countries separately, or by international co-operation, there might very probably have developed no successful Hitler movement and no new outbreak of warfare.

We are familiar in the history of social reform with the concept of the minimum. Governmental policy has, in large part, in this area been directed not at regularizing the whole of economic life, but merely at establishing minimum standards below which the automatic functioning of the price system and the system of free enterprise is not permitted on grounds of social policy to fall. This is the theory of the minimum wage, of maximum hours, and of minimum requirements with respect to working standards. This is the theory back of the minimum standards set by government for education, health, and sanitation regulations.

It is at this point that depression policy emerges in a new role as an important element in a positive governmental program. But an economic minimum cannot be insured by reliance exclusively upon monetary policy.

Federal Reserve Policy

In the decade of the twenties the Federal Reserve System experimented with various tools of monetary control.² An unwarranted optimism prevailed with respect to the efficacy of monetary action to stabilize prosperity. Emphasis on the forty-month cycle had the unfortunate effect of slurring over the essential difference between inventory recessions and major depressions caused by the sharp curtailment of fixed capital investment. Thus, the mild depressions of 1924 and 1927 were not clearly recognized as minor ebbs in a great tidal wave of investment activity. Relatively minor open-market operations in both these periods were given more credit than was warranted for the resumption of recovery to still higher levels.

² See C. O. Hardy, *Credit Policies of the Federal Reserve System*, Brookings Institution, 1932; S. E. Harris, *Twenty Years of Federal Reserve Policy*, Harvard University Press, 1933; Arthur Hersey, "Historical Review of Objectives of Federal Reserve Policy," *Federal Reserve Bulletin*, April, 1940.

The apparent success of these measures distracted attention away from the deeper causes of the sustained prosperity of the twenties—the powerful upsurge of investment activity in building and in a half-dozen growing industries especially related to the automobile and electrical industries. Like Rostand's Chantecler (with his faith in the causal connection between his morning crowing and the rising sun), monetary enthusiasts watched with satisfaction the apparently favorable results of monetary policy. But most economists, while not overlooking the usefulness of open-market operations, remained skeptical of far-reaching business cycle consequences, and some stressed the deeper factors of technical progress and investment opportunities. Central bankers themselves, while studying the new monetary experiments, were not too sure what results might with confidence be expected. On the whole, however, hopes ran high that a large measure of stability could be achieved by purely monetary devices.

The Reserve System had been established on the commercial banking theory. The member banks ideally were to extend credit only on the basis of self-liquidating loans. They were to "monetize" the credit of producing and marketing units. Bank loans were to finance goods during the process of production or marketing. And when the process was completed, the sale of the goods would supply the funds to repay the loans. Thus, the process of production would be facilitated by bank credit accommodation. But investment in plant and equipment ought to be financed, it was believed, from savings and not by the banking system. Unlike the neutral money proposal of Hayek, the commercial credit theory held that bank credit might legitimately finance the current production and might expand as such production expanded. The "neutral money" theory, however, held that bank credit ought not to be permitted to finance inventories any more than fixed capital. Both theories, however, agreed that fixed capital investment should be financed from savings and not from bank credit.

In practice, however, the member banks were not able to

live up to the rigid standards imposed by the commercial banking theory. Commercial loans of the self-liquidating type were not available in sufficient quantity. Hence, banks turned increasingly to other assets. Thus, the investments of member banks increased from about six billions of dollars in 1920 to about ten billions in 1929. The exigencies of war finance more or less forced this development not long after the Reserve System was established. Loans on government securities and bank purchases of governments and industrials thus became established practices. After the war was over, the policy of the Board was at first directed toward achieving a return to purely commercial banking practice. But this policy failed, simply because it did not square with the facts. Business was increasingly so organized that bank loans were less necessary. Banks were forced to employ an increasing part of these funds in long-term investments or in loans based on securities. While the Federal Reserve Banks were forbidden by law to rediscount investment paper, the law did not prohibit member banks from acquiring security loans and investments. Thus, regardless of what might be regarded as desirable practice, the Board recognized that it had no power to hold the banks to self-liquidating loans.

In the famous 1923 Report of the Board, it was argued that open-market operations of the System should be managed with an eye to the general credit situation. Concern was felt not only for the quantity of credit, but also for the uses to which it was put. Especially, it was felt that "speculative" uses should not be encouraged. Speculative activities were broadly conceived to include not merely stock market operations, but also excessive accumulation of inventories and abnormal spurts in capital expenditures, foreign exports, and consumer installment credit. The wave of speculative activity in the stock market in the late twenties became the occasion of grave concern. Brokers' loans reached extravagant proportions. The Board wished to direct adequate funds toward production and to check speculation. But it had no effective power to deal with the situation. The ease of capital flotations undoubtedly

carried the investment boom farther than was economically justified.) Errors of optimism played a role in pushing investment to a higher degree of saturation than would otherwise have occurred. This much may be granted to those who stress the importance of monetary policy. But, on the other side, it should be underscored that had banking policy successfully stopped investment plans short of the errors engendered by the monetary situation, a true investment saturation would nevertheless have been reached, leading to a deep depression.

The failure to check the speculative movement revealed the essential weakness of monetary policy, even as a device to check the boom. It was not possible, by means of Central Bank control over credit, to ensure adequate funds for productive uses and to choke off funds for speculative uses. The generalized controls were not adequate. Tightening the money market only meant that the stable run of industries were checked, while the speculative parts of the economy forged ahead, lured by prospects of profits far in excess of the cost of money. Thus, the conviction grew that more direct methods—such as the control of margin requirements on collateral loans—were necessary if the speculative sector were to be brought under control.

With the coming of the Great Depression, attention was necessarily directed toward the problem of checking the deflation and promoting recovery. Toward this end, discount rates were reduced. But this availed but little, since, under the process of liquidation and debt cancellation, banks strove to reduce their borrowings at the Reserve Banks. Federal Reserve credit declined from around \$1.5 billion in 1928–29 to around \$1.0 billion in 1930–31. This contraction occurred despite the fact that the sharp reduction in rediscounted paper was in considerable measure offset by open-market operations in early 1930. This purchase of United States securities helped (a) to cushion the stock market crash, (b) to supply the increasing demand for currency and gold, and (c) to enable the banks to reduce their indebtedness to the Reserve Banks without effecting too drastic a decline in member bank reserves.

With the British abandonment of the gold standard in 1931, member bank borrowing at the Reserve Banks sharply increased. Moreover, after the Glass-Steagall Act of February, 1932 had freed the gold (in excess of the minimum 40 per cent requirement) formerly held to secure the Federal Reserve notes, the System was able to extend greatly its open-market operations. Over a billion dollars of government securities were purchased in 1932. Thus, the total Federal Reserve credit was increased from less than one billion dollars to about \$2.2 billions, thereby creating for the first time a large volume of excess member bank reserves. This action helped the banks to weather for some time the successive liquidation crises. Eventually, however, the terrific decline in security and real-estate values, the increasing volume of frozen loans, together with the continued withdrawals of deposits, forced the temporary closing of all the banks and the liquidation or reorganization of the weaker members.

By the end of 1933 the banks had repaid most of their borrowings at the Reserve Banks. Federal Reserve holdings of government securities were now increased to nearly \$2.5 billions and these constituted from now on almost the whole of the earning assets of the Reserve Banks. In consequence of these open-market purchases, member bank excess reserves increased to nearly one billion dollars. Beginning with 1934 the excess reserves were progressively augmented by gold imports, until at the beginning of 1936 they amounted to about three billion dollars. The combined program of gold sterilization and raising the reserve requirements cut the excess back to well under a billion in midyear 1937. The reversal of this program, in the form of approximately a one-eighth reduction in the reserve requirements, and especially in the release of the sterilized gold, together with additional gold imports, shot excess reserves back to three billions by the midyear 1938. The accelerated gold inflow after the Munich crisis raised excess reserves to six billions by the middle of 1940.

This unprecedented development was mainly the result of gold imports into the United States. While deliberate Cen-

tral Bank action would doubtless never have pushed an easy money policy to such extremes as we have recently experienced, the outcome, more or less accidental, has given us a striking laboratory experiment. We have been privileged to observe what contribution can be made by the utmost limit of Central Bank action toward economic recovery.

Cheap Money

The result is very illuminating. The rate of interest on Treasury bills has fallen close to zero from the level of $4\frac{1}{2}$ to 5 per cent in 1929. Short-term commercial paper and trade acceptance rates would have followed a similar course had not the banks, by collective agreement, fixed the rate at 1 per cent. The yield on Treasury notes fell from around 3 per cent in 1933 to one half of 1 per cent in 1939. Commercial loan rates of city banks fell from $4\frac{1}{2}$ to 5 per cent in 1932 to $2\frac{1}{2}$ per cent in 1938. United States Government long-term rates fell from 4 per cent in 1929 to $2\frac{1}{2}$ per cent in 1939 and just over 2 per cent in 1940. High-grade corporate bond rates fell from $4\frac{3}{4}$ per cent in 1929 to 3 per cent in 1939.

A characteristic of what may be regarded as a normal, cyclical interest-rate pattern is the narrowing of the spread between short-term and long-term yields as recovery develops. In an intense boom the short-term rate may even rise above the long-term rate, while in deep depressions the short-term rate is normally far below the long-term rate, and, indeed, in extraordinary depressions approaches the zero limit. Thus, the intensity of a boom can be measured, in a degree, by the relation of the short-term rate to the long-term rate, and similarly the intensity of a depression.

But this pattern is by no means fixed, since numerous factors operate to modify and distort it. Under certain conditions it is not impossible that a fairly high level of prosperity may be reached with short-term rates rising scarcely at all. This, indeed, was the case in 1937 and again in 1939-40. There was no strong, surging investment boom adequate to absorb all

of the funds available in the long-term capital market. Thus, borrowers were not compelled to go to the banks for funds on a scale adequate to mop up all, or even any appreciable fraction, of the surplus funds available in the banking system. This condition was caused: (1) partly by the meagerness of private investment outlets, particularly in residential housing and in public utility and manufacturing plants; and (2) partly by the abnormally large banking resources created: (a) by the vast inflow of gold, and (b) by the new money created by the issue of silver certificates.

The extraordinary willingness to hold cash in recent years—a function partly of the greatly increased supply of money, partly of increased risk and uncertainty throughout the world, and partly of inadequate investment outlets—has affected profoundly the short-term rate and the rate on gilt-edged securities.

The areas in the interest-rate structure that can be reached by Central Bank policy are the short-term rates and the gilt-edged, long-term rates. But they are not the only areas, very probably not even the most important ones. Low interest rates in these areas do indeed “spill over,” in a measure, into other areas, but not very effectively. The interest-rate structure is not as fluid and flexible, nor are the various parts in as sensitive interconnection as has frequently been supposed, or as one might wish for. The flooding of the banking system with excess reserves can bring the rates down in the areas enumerated above, but it has little effect on real-estate mortgage rates, the more speculative securities, or on commercial or personal loans in the smaller cities and rural communities. Six and even 8 per cent remains the traditional rate for small borrowers outside of the larger cities. “In 1938 about one-fifth of all member banks received on the average more than 7 per cent on their loans, and the proportion must be larger for non-member banks.”⁸

⁸ Woodlief Thomas: “The Banks and Idle Money,” *Federal Reserve Bulletin*, March, 1940, p. 197. See also E. A. Goldenweiser, “Cheap Money and the Federal Reserve System,” *Federal Reserve Bulletin*, May, 1940.

Thus, for the extremely important area of residential building, for the general run of intermediate and small-scale enterprise, for the more risky ventures, and for small cities and communities, cheap money in the banking system offers no adequate remedy. For these areas fantastically high excess reserves and a high degree of bank liquidity are apparently of little avail.

The inadequacy of Central Bank action in these important areas forced the development of other types of institutions designed to cope directly with the problem. To this end, scores of governmental corporations have been organized. These include the various lending agencies now grouped under the Federal Loan Agency. The R.F.C., from February 2, 1932, to December 31, 1939, poured altogether \$4,075,000,000 into the banking system, including loans to open and closed banks to meet depositors' claims and purchase of preferred stock to bolster up weakened bank capital structures. To railroads with weakened credit it has made loans aggregating \$1,372,000,000. In addition, \$2,443,000,000 was advanced for the benefit of agriculture, including loans on cotton, corn, tobacco, and other commodities, loans to agricultural and livestock credit corporations, and other aids to agriculture. Loans to business enterprises amounted to \$519,000,000, and \$1,032,000,000 was advanced to self-liquidating public projects.⁴ Altogether, \$10,627,000,000 has been loaned or invested by action of the Directors of the Corporation and, in addition, \$2,921,000,000 by direction of Congress in allocations and loans to various governmental agencies and for relief. The Federal Farm Mortgage Corporation and the Federal Land Banks have refinanced about two billion dollars of farm mortgages. This action had the combined effect of lowering the debt charges to overburdened borrowers and of protecting the lenders—banks, insurance companies, and other investors—who were caught with sour mortgages on their hands. In a similar manner, the Home Owners' Loan Corpora-

⁴ See article by Emil Schram, Chairman of the Board, Reconstruction Finance Corporation, in *Britannica*, 1940 Yearbook. p. 574.

tion refinanced about three billion dollars of frozen urban mortgages. All these salvaging operations were important in order to start again a flow of expenditures on current production, whether of consumption or investment goods.

In addition, certain lending agencies, such as the Rural Electrification Administration, made funds available directly for new investment. Further, the Federal Housing Administration, by guaranteeing loans on residential construction, encouraged banks, insurance and other financial companies to enter a field where, without a guarantee, they would not venture without demanding rates so high as to preclude willingness to borrow.

These lending agencies supplement in an important manner the Central Bank devices, effective only in restricted areas, to reduce the rate of interest. Both of these mechanisms—Central Banks and government lending agencies—aim to stimulate investment and consumption expenditures by making the terms of borrowing favorable. Some of the agencies offer government funds directly to the borrower. Others, like the F.H.A., tempt private funds into the field at rates that can be borne by the borrowers through guaranteed financing on the principle of insurance. Thus, we have witnessed in the thirties a very broad supplementation of Central Bank policy designed to supply funds at low cost to the borrower.

But the decade of the thirties offers abundant evidence that cheap money alone is not adequate. Cheap money will not tempt borrowers if there are not available reasonably satisfactory outlets for profitable investment. Cheap money can encourage investment if conditions are favorable. But it will not of itself produce an adequate volume of investment and consumption. This is the lesson which we have learned, or which has at least been heavily reinforced, from the experience of the thirties.

Chapter IV

FISCAL POLICY IN THE RECOVERY

RECOVERY from the deep depression of 1932-33 proceeded by fits and starts, but on the whole at a fairly satisfactory rate, until 1937. The speed of the recovery, up to this point, was clearly one of the most rapid in our history, and probably about as rapid as the economic organism could digest. The recovery was, moreover, one of the longest in American experience.

In 1937, however, the recovery was checked at a point barely exceeding the 1929 total output level, but about 7 per cent below 1929 in terms of per capita output, and far below 1929 in terms of the degree of full employment reached. Thus, before a full recovery was reached, a major depression was allowed to develop until well into 1938. In the second quarter of that year the tide was turned by a positive program of federal expenditures, and by late 1939, stimulated by the war, the 1937 level was recovered, but no new ground conquered. In broad outlines, the recovery made satisfactory progress until August, 1937, and since then has been operating at about 70 to 80 per cent of reasonably full employment.

A combination of circumstances produced the depression of 1937. A part of these could have been avoided, but in part it was a normal reaction from a prolonged upswing. With respect to the mistakes made, careful account should be taken of them for future guidance,¹ and every effort made to avoid them. Some (for example, the labor difficulties) were related

¹ See my discussion of the causes of the 1937 depression in *Full Recovery or Stagnation?*, W. W. Norton and Co., 1938, Part IV.

to fundamental changes which the American economy was undergoing. But whatever the causes, once the downturn was started, it was a mistake to permit an acceleration of the recession and to countenance contraction at just the point when vigorous expansion should have been undertaken. If a bold program of federal expenditures had been undertaken in September, 1937, when danger signals were sufficiently in evidence, the precipitous stock market crash of October could have been largely averted, and the recovery pushed forward after a moderate and wholesome (in terms of the cost-price situation) setback. Federal expenditures on useful public projects should have been shot up, in fiscal 1938, \$2 to \$3 billions in excess of the 1937 level—or, in other words, to \$10 or \$11 billions. We may remind ourselves that \$13.5 billions is the figure contemplated for the fiscal year 1941. Had the defense program, or something equivalent, been started in the autumn of 1937, the national income could have been lifted to \$85 or \$90 billions by 1940.

Expansionist Program vs. Salvaging Operation

Despite the fairly good showing made in the recovery up to 1937, the fact is that neither before nor since has the administration pursued a really positive expansionist program. Until 1936, public works outlays² fell far short of the level of the twenties, and since then have only slightly exceeded that level. For the most part, the federal government engaged in a salvaging program and not in a program of positive expansion. The salvaging program took the form of refinancing urban and rural debt, rebuilding the weakened capital structure of the banks, and supporting railroads at or near bankruptcy. As we have seen, the Reconstruction Finance Corporation, the Home Owners' Loan Corporation, and the Farm Credit Administration poured \$18 billions into these salvaging operations. The federal government stepped into the

² Account is here taken of all public works, federal, state, and local. Federal public works, of course, ran much higher than in the twenties.

breach and supported the hard-pressed state and local governments—again a salvaging operation. One has only to consider the items accounting for the increase in recent years in the federal budget to see how true this is. Unable to carry the relief burden and to continue a normal program of public works, the local units turned to the federal government. From 1934–39 inclusive, \$13.8 billions of the federal deficit of \$18.7 billions is accounted for by the single item of unemployment relief. Other items which greatly relieved the fiscal position of local governments were the Agricultural Adjustment program, involving expenditures of \$3.2 billions, and public works (largely as grants-in-aid or as substitutes for diminishing local outlays), amounting to \$5.4 billions in the same period.

That a salvaging program of this magnitude was necessary was, of course, due to the unprecedented depth of the depression reached by early 1933. An important lesson that we can learn from this experience is the waste of funds for salvaging purposes which must be incurred if a depression is allowed to cumulate until the national income is cut in two. Under such circumstances the economy dries up like a sponge. Vast governmental expenditures, designed to float the "sponge" to a high level of prosperity, are instead absorbed by the sponge itself. The expenditures seemingly run to waste. This is the salvaging process. Only when the economy has become thoroughly liquid can further funds float it to higher income levels. A deep depression requires vast salvaging expenditures before a vigorous expansionist process can develop.

It is evident that governmental expenditures during the thirties were not of a character well calculated to take the place of private investment as a means to stimulate employment expansion. The deficit was not the result of a long-range program to fill the gap left by the receding tide of private investment. The spending was rather of an emergency type forced upon the government by reason of (1) the distress of unemployed urban workers, (2) the distress of farmers with declining income and overburdened with debt, (3) the weak-

ened capital position of banks, railroads, and other industries, and (4) the weakened fiscal position of state and local governments.

In the early stages of the depression the local governments were forced to bear the brunt of the onrushing deflationary movement. In 1930-31 they made considerable loan expenditures for relief and public works. State and local outlays for construction and maintenance of government plant averaged over \$3 billions in 1930-31. By 1932, however, the resources of the local governments were largely exhausted, and a sharp curtailment set in. Federal expenditures on construction and maintenance did not, however, take up this slack until as late as 1936.

TABLE V

Outlays for Construction and Maintenance of Public Works^a
(millions of dollars)

<i>Year</i>	<i>Total gov't public works</i>	<i>State and local funds expended on public works</i>	<i>Federal public works and federal aid to local units</i>
1929	3,309	2,952	357
1930	3,733	3,288	445
1931	3,424	2,884	540
1932	2,539	1,949	590
1933	1,918	1,133	785
1934	2,474	1,208	1,266
1935	2,548	1,125	1,433
1936	3,496	1,316	2,180
1937	3,329	1,391	1,938
1938	3,711	1,612	2,099

From the above table it is evident that the rising federal outlays were quite inadequate until 1936 to hold total government construction to the predepression level. Total outlays were \$1.4 billions short of the 1929 level in 1933, and \$800 millions in 1934 and 1935. Before one makes a judgment of the efficacy of the federal public works program in the

^a T.N.E.C. Hearings, Part 9, *Savings and Investment*, p. 4064.

years 1933-35, one must take cognizance of what was happening to state and local outlays on construction. The federal government only helped to hold back the receding tide. Government as a whole made no positive contribution, through public works, toward recovery.

Had it been possible to maintain private fixed capital investment, including producers' plant and equipment, residential and private nonprofit construction, at the \$14 billion level of the period 1925-29, it is reasonable to suppose that state and local construction would have remained high and that the total national income could have been sustained. The measure of the decline in private investment in the thirties indicates the magnitude of the task confronting the government.

The following table gives the deficiency of private investment expenditures below the \$14 billion level, together with the induced deficiency of consumption, in each year of the decade in terms of current dollars.

TABLE VI
(Billions of dollars)

Year	<i>Private Investment</i>	<i>Consumption</i>
	<i>Deficiency below the</i> 1925-29 level of \$14 billion	<i>Deficiency below the</i> 1925-29 level of \$70 billion *
1930	\$3.4	\$0.9
1931	7.1	13.7
1932	10.5	25.5
1933	11.1	27.7
1934	10.1	20.3
1935	8.7	17.8
1936	6.8	11.1
1937	4.5	7.9
1938	6.8	12.4
1939	5.6	8.6
Total	<u>\$74.6</u>	<u>\$145.9</u>

* It should be noted, of course, that in real terms the deficiency was much smaller than this—indeed, had been wiped out by 1937.

Over against this deficiency of private investment and consumption, let us consider the record of the federal budget during the decade. The following table gives the expenditures, tax receipts, and deficits in each fiscal year in the decade.

TABLE VII

<i>Fiscal year ending June 30</i>	<i>Federal Budget, 1931-40 (billions)</i>		
	<i>Expenditures</i>	<i>Tax Receipts</i>	<i>Deficit</i>
1931	\$3.7	\$3.2	\$0.5
1932	4.5	2.0	2.5
1933	3.9	2.1	1.8
1934	6.0	3.1	2.9
1935	7.0	3.8	3.2
1936	8.7	4.1	4.6
1937	8.2	5.0	3.2
1938	7.2	5.9	1.3
1939	8.7	5.2	3.5
1940	9.0	5.4	3.6
Total	\$66.9	\$39.8	\$27.1
Annual average 1931-40 (10 fiscal years)	\$ 6.7	\$ 4.0	\$ 2.7
Annual average 1926-30 (5 fiscal years)	\$ 3.2	\$ 4.1	\$ 0.9 (surplus)

During the first three years of the depression, federal expenditures continued, for the most part, along traditional lines at approximately the usual rate to which they had settled down in the twenties. It is true that in the fiscal year 1931 public works had increased to \$421 millions, and loans amounted to \$263 millions. In the fiscal year 1932, owing especially to the financial difficulties encountered by the banks and the railroads, loans increased to nearly \$873 millions. In addition, federal public works were expanded to half a billion dollars, about double the level of the late twenties. In the next fiscal year total expenditures were reduced by \$700,000,000 and, except for public works amounting to \$472,000,000 and loans of \$181,000,000, were close to the predepression level.

Thus, during the first three years of the depression there occurred an average increase in public works and loans of nearly \$700 millions per annum. These items account almost wholly for the increase in total expenditures to \$4.0 billions, compared with \$3.2 billions in 1926-30.

From 1933 on, the picture is changed, mainly by: (1) an increase in public works expenditures from an average of \$464 millions in 1930-33 to \$940 millions per annum in 1934-40;⁵ (2) relief expenditures (including direct relief, work relief, W.P.A., C.C.C., etc.) which had grown from zero in 1930-32, and \$360 millions in 1933, to \$2,243 millions per annum in 1934-40; and (3) the Agricultural Adjustment program, averaging \$592 millions per year. Together, these three items account for \$3.8 billions, or a half of the \$7.8 billions annual expenditures in the period 1934-40. They account for practically all of the excess expenditures of this period over the average of the period 1926-30.

It is evident that the major effort was directed toward salvaging human and capital resources. Altogether, for this purpose, direct federal expenditures amounted to \$26 billions during 1934-40, while indirect expenditures through governmental agencies account for some \$18 billions.

Tax receipts averaged in the thirties almost exactly the same as in the fiscal years 1926-30, while expenditures averaged \$3.5 billions more per annum. Thus, the federal government poured \$6.7 billions per year into the income stream and took back \$4.0 in the form of taxes, the "net contribution" measured in this crude manner being \$2.7 billions per annum. A somewhat more refined, but still not wholly satisfactory, method of measuring the net contribution of the federal government to the money flow has been attempted by Martin Krost. According to this calculation, the net annual contribution of the federal government in 1931-40 was \$2.66 billions.⁶

⁵ Loans declined from \$439 millions per annum in 1930-33 to \$304 millions in 1934-40.

⁶ An effort was made to eliminate from expenditures items which did not enlarge the income stream, and from the tax receipts items which did not

While there are important differences from year to year, the average for the entire decade scarcely varies at all from the average excess of all expenditures over all tax receipts.

The so-called "net contribution" of the government may be regarded as similar to private investment expenditures in so far as both are offsets to saving. It is important, however, to take the "net" figure rather than total expenditures, for the reason that a part of government expenditures are financed from funds which are taken from the consumption and not from the savings stream. In contrast, private investment expenditures are in the usual case financed from the savings stream or from new bank funds. These funds ordinarily are not abstracted from consumption. But the statistical materials necessary to get the ideal "net contribution" of government are not available. The calculation as currently made is an understatement. It is, at any rate, clear that we have no right to take all of the governmental expenditures and regard them (along with private investment) as income-producing expenditures that offset saving. Nor can we take as a satisfactory measure the capital expenditures (public construction) of the government. This is true for the reason that such expenditures may be financed from consumption taxes and, therefore, may not form an outlet for saving as private construction does.⁷

There is, moreover, a very important difference between various kinds of governmental expenditures with respect to their potency in generating employment and income. As we have already indicated, the major new expenditure by the federal government was made in the form of relief. Such expenditures, especially in a period of general depression, are likely to be less effective in raising income and employment

abstract from the income stream. Thus, the "net income-creating expenditures," so called, are total expenditures that make a positive contribution to the income stream minus total taxes which abstract from the income stream.

⁷ It is, of course, a coincidence that, when one takes all governmental bodies into consideration—federal, state, and local—the so-called "net contribution" (\$20.5 billions per annum) was not very different in 1933-39 from the average annual volume of public construction of \$18.5 billions.

than expenditures on public works. This thesis, to be sure, is often denied. It has been argued by some that relief expenditures are more potent because the funds are paid out to very needy individuals who will at once spend all, or nearly all, of it in the consumers' market and thereby at once, and to the fullest extent, stimulate employment and output. It is also said that, in the case of public works, the money is paid out to contractors who will use some considerable part of the money to pay off debts at the banks, or liquidate other indebtedness, and, in part, will simply hold the funds idle. Thus, it is said that the commodity market and employment are stimulated less in the case of public works.

Some comments with respect to this controversy are pertinent. In the first place, it should be noted that, while the utilization of the funds paid out in the commodity market is, in the first instance, quicker and more active in the case of relief payments than in the case of public works, this fact is true only for the first round of expenditures. Once the relievers have bought goods at the stores, the storekeepers will use the money in the second round of expenditures, partly to liquidate debt and, in part, to hold funds idle. In the second and subsequent rounds of expenditures there is no clear presumption that one case is different from the other. Thus, this part of the argument, while valid up to a certain point, can easily be greatly exaggerated. On the other hand, more important, I think, is the difference in the induced consequences of the two kinds of expenditures upon investment and employment. In the case of relief expenditures, the additional purchases by relievers is relatively small compared to the large volume of consumption expenditures made by the community as a whole, even in periods of deep depression. The additional purchases are spread very thinly over the vast consumption industries, thus giving very little stimulus to increased output, and are, therefore, likely to induce hardly any increase in employment. This is true because there is sufficient slack in the consumption industries to permit the additional output without taking on additional workers, and frequently even without

increasing part-time employment. Thus, the induced employment from relief expenditures is likely to be very insignificant.

On the other hand, public works expenditures are likely to have a much greater induced effect on employment, for the following reasons. In a period of serious depression, it is the constructional and heavy industries—those relating to fixed capital production—which are seriously depressed. Employment has fallen to a mere fraction of the level reached in the boom, and construction and heavy industries output is at a low capacity level. Many constructional companies have gone into bankruptcy and passed out of the picture. Many heavy goods industries are largely shut down, and in these even replacement capital expenditures are likely to be running at a low level. But when orders come in for construction projects, workers are re-employed and the plant is reconditioned. Public works expenditures of \$4 billions or \$5 billions would have a tremendous effect upon re-employment and upon capital expenditures. It should be noted that an expenditure of the magnitude of \$4 billions to \$5 billions is fairly large, even in relation to total fixed capital construction in boom times. From 1925 to 1929, private fixed capital investment, including plant, equipment, housing, and nonprofit construction, amounted to \$14 billions per annum. Thus, an injection of from \$4 billions to \$5 billions of public works would represent a really large figure in relation to even prosperity levels of activity in the capital goods industries. On the other hand, as noted above, a similar amount spent on relief is a very small proportion of the total consumption expenditures. A public works program of relatively moderate proportions will, therefore, induce a very large increase in employment in the construction and heavy goods industries. Thus, the leverage effect of a public works program on employment, taking account of both consumption and investment repercussions, is relatively large.

The magnitude of public expenditures, whether for govern-

mental capital projects or for community consumption, required to counteract a depression as intense as that of the early thirties is enormous. If we underestimate the task to be performed, we are prone to disappointment over quite inadequate efforts from which too much was expected. The task confronting any government intent on a vigorous antidepression policy in 1930-35 can be gleaned from Table VI on page 87, giving the decline in private outlays on plant, equipment, and housing, including private, nonprofit construction.

It would not have been necessary for the government to fill the entire gap left by the receding tide of private investment. Yet in the earlier years—1930 and 1931—it is probable that, in order to have prevented any considerable decline, the outlays would have had to be approximately equal to the decline in private investment. It is a great mistake to assume, as some have, that a mere announcement by the government that it will fill the gap if private enterprise failed to do so would alone be sufficient, and that therefore very small expenditures would, in fact, be necessary. This overly optimistic view fails to take cognizance of the high degree of saturation reached by private investment at the end of a major boom. Private investment, on the scale of the late twenties, could not uninterruptedly have been maintained, even on the basis of favorable expectations with respect to vigorous government action and reasonably satisfactory maintenance of the national income. Not until depreciation, obsolescence, growth of population, and new technological developments had again enlarged the outlet for private investment could the government safely assume that private investment would again become reasonably adequate.

But one can also exaggerate the government's load. This is true for the reason that vigorous governmental action (for example, in 1930 and 1931) could have stopped the secondary cumulation of the deflation. While large private outlays on *new* investment could not have been expected in the early thirties, the disinvestment which occurred could have been

largely prevented. Had the government stepped into the breach and maintained the national income on a moderately high scale, private capital expenditures would not have fallen anywhere near as low as they actually did. For these reasons, had the government decided to take vigorous action, the gap left by the declining private investment in 1930-35 would have had to be filled only in part by the governmental outlays.

It is in the first years of a depression that especially vigorous governmental policy is necessary.⁸ Bold action at that stage can prevent the drastic disinvestment which the cumulative secondary deflation will surely bring if it is allowed to run its course. Moreover, if the secondary deflation can be prevented, it will not be necessary later to engage in large salvaging operations, which, valuable and necessary though they be, must nevertheless yield disappointing results from the standpoint of the goal of a positive recovery.

Not only are the timing, magnitude, and character of expenditures important; equally significant is the manner of financing. New and burdensome consumption taxes were imposed both by the federal government and by state and local units in the thirties. Federal consumption-tax receipts increased from \$1.1 billions in 1933 to \$2.2 billions in 1935. To this was subsequently added the social security payroll taxes. The local governmental units resorted more and more to consumption taxes, until by 1938 they were collecting \$2.5 billions from these sources, not including the unemployment insurance payroll taxes. Consumption taxes are repressive in character and tend to place a drag on recovery.

Thus, to sum up, various factors tended to reduce the effectiveness of the fiscal recovery program as it actually developed. Large expenditures of a purely salvaging character

⁸ There were, of course, peculiar difficulties in the early thirties. Tied, as the leading countries were, to the gold standard, expansionist policy would have had to have been engaged in simultaneously by many countries to be really effective. Separate action by one country alone on a large scale would have necessitated abandonment of the gold standard. In the state of public opinion in the early thirties, this was clearly impossible in the United States.

had to be made, especially in 1933-35. The gross inadequacy of public works expenditures forced undue reliance on the less stimulating relief expenditures. And, finally, a drag was placed upon recovery by reason of the increase in consumption taxes.

Chapter V

RECOVERY IN GREAT BRITAIN

IN a world in which international factors play so large a role it is somewhat astounding that two large trading countries could have had experiences so diverse as those of the United States and Great Britain in the two decades between the two World Wars. In the twenties Great Britain suffered from chronic unemployment and lagged behind the general world postwar recovery. The United States, on the other hand, enjoyed a prolonged boom. In the early thirties Britain escaped with only a moderate decline in income and employment, while the United States had her national income cut to one half its former level. In the middle and late thirties Britain made a very satisfactory recovery, reaching a level of employment and production considerably better than that of the late twenties. The United States made a more rapid recovery percentage-wise, but, having fallen to a much lower level in the depression, did not achieve, in the first recovery movement culminating in 1937, as high a per capita output as that of the late twenties and continued to face a vast unemployment problem.

And just as the unfolding of events was different, so also were the public policies pursued. Throughout the depression, with relatively unimportant exceptions, the British balanced their national budget, while the United States throughout the depression and the recovery ran a large deficit.

Depression in England Relatively Mild

In considering England's budgetary position¹ during the depression, it is especially important to remember that her national income fell by only 15 per cent.² Moreover, England's income and employment ceased to fall as early as 1931, remaining at substantially that level through the following two years. Owing to the comparative mildness of the depression, she was able to balance her budget without making any important changes in expenditures and tax receipts. It is true that in the financial year 1931-32 additional income taxes and unemployment insurance contributions³ were imposed, netting nearly £70 millions, while economies of about £60 millions were achieved through reduction in unemployment benefits and other economies. These are, however, relatively small figures in a budget of £725 millions. Broadly speaking, the budget was balanced without making any substantial reductions in the regular services and functions of government and without raising the tax rates on ordinary sources of revenue.

Unique Measures and Circumstances

Without resorting to any drastic measures either of economy or of taxation, two measures, deliberately undertaken, helped to ease the budget problem. On the one side, the service on the public debt was greatly reduced owing to the conversion operations. A reduction in the rate of interest in a country having a large public debt can yield huge savings. The conversion operations contributed very greatly toward balancing

¹ See George Jászi, "The Budgetary Experience of Great Britain in the Great Depression," pp. 176-211 in *Public Policy*, Harvard University Press, 1939, a model of careful analysis. I have drawn heavily upon Mr. Jászi's work, undertaken at my suggestion, for materials in this chapter. The reader is urged to turn to his illuminating statement.

² See Colin Clark, "Determination of the Multiplier from National Income Statistics," *Economic Journal*, September, 1938.

³ The Unemployment Insurance Fund was incorporated into the Budget in order to save it from financial disaster.

the budget. But it is necessary to note that this sort of measure is, of necessity, nonrecurring in character, and that, moreover, it cannot be used effectively in a country unless its public debt is so large that the service on this debt constitutes an important fraction of the total budget.

On the other side, the imposition of high customs duties in 1932 brought in additional revenues and, at the same time, stimulated investment in the protected industries. This also is a measure, like the conversion, which can be applied only once, and was, moreover, not open to a country like the United States, which already had high tariff rates.

Yet despite the contribution made by the conversion operations and the new protective tariff, the budget could not have been balanced had England suffered a really serious depression. Had the national income declined heavily after 1931, there can be little question that the balanced budget program would have failed. And even had the national income continued for several years at the moderately low 1931-33 level, it is doubtful whether a rigorous balancing of the budget could have been achieved without growing public criticism. But by 1934 recovery was under way, larger governmental expenditures were thereby made possible, and so the strain was eased.

In April, 1933, the London *Economist*, commenting on the budget situation, remarked that the Chancellor had been compelled

to abandon budgetary purism—only to be inhibited by innate conservative caution from the “expansionism” which is the only alternative to a ruthlessly logical, but politically impracticable deflation of expenditure. . . . To us the most disquieting aspect of Mr. Chamberlain’s speech was the absence of any sign that the government even now appreciates that, unless the national income expands, a balanced budget on a £700 millions scale—and that too after realizing all the possible savings from conversions and low interest rates—becomes a patent impossibility. [The Chancellor] gave no indication that the Government are even thinking seriously of any bold scheme of housing or other productive “works.” . . . A Government which lacks the will or the courage to stimu-

late economic activity by a bold loan policy outside the Budget gives the Budget-maker an impossible task.⁴

It is important to inquire into the circumstances that explain why the deflation stopped short at a decline of only 15 per cent in the national income and why subsequently a strong recovery developed. It is generally agreed by English economists that the depreciation of the foreign exchange value of the pound in 1931, vis-à-vis the United States and the gold countries in Europe,⁵ was an important factor in stopping the further fall in prices and income. The firm adherence to the gold standard in these countries protected England from the danger of competitive currency depreciation. This enabled England to achieve an advantage in the world markets over her leading export competitors. On the other side, countries complementary to Britain—Canada, Australia, New Zealand, Argentina, and Scandinavia—depreciated their currencies and joined the so-called sterling bloc. This also was an advantage to England. Thus, England achieved the best of two worlds: (1) an export advantage over competitors, and (2) an improvement of trade through exchange stability with countries complementary to her economy. In this respect England occupied a quite unique position. No other country in the world was in so favorable a position to profit, on the one side, from the unfavorable trade position of the gold standard countries and, on the other side, from the improved trading position of the agricultural and primary producing countries which had depreciated their currencies.

An important result of the depreciation of sterling was the easing of the money rates. Cheap money undoubtedly contributed materially to the British recovery. Cheap money, as the American experience demonstrates, cannot of itself produce a strong revival. If a country has just experienced a vigorous investment boom and the depression largely reflects a temporary saturation in plant, equipment, and housing, low

⁴ Quoted from Jászi *op. cit.*, pp. 180-81.

⁵ Mainly France, Belgium, Holland, and Switzerland.

money rates will not avail. But England's situation was different. The prolonged chronic depression of the decade of the twenties left England, by 1931, with a large backlog of unsatisfied housing requirements. Moreover, for many reasons which we cannot here go into, British industry had not undergone any such extensive "rationalization" as that experienced by American and German industries. Thus, England was ripe, by 1932-33, for a considerable investment boom. In the twenties England had been starved, while the United States had been surfeited with capital or investment goods.

The United States had ridden to high prosperity in the twenties on the tidal wave of rising new industries centering in and around the automobile. In the twenties England could see no solution for her troubles except the recovery of her old position in the world market. She was looking to the revival of her old export industries. This proved a forlorn hope. In the thirties she turned to her home market. The Tariff Act of 1932 gave an impetus to important domestic industries. A free trade country like England was in a peculiarly favorable position to introduce a general protective tariff as a recovery measure. But, obviously, this remedy is of a nonrecurring character and could not be repeated as a regular recovery policy. Aided by a new protective tariff, England was able to build new industries—the automobile, electrical equipment, electric power, and the chemical industries. In view of the quite different investment possibilities, it is no mystery that cheap money worked in England but not in the United States.

When British total output is segregated into (a) output for the home market and (b) output for the foreign market, it will be seen that output for the home market was well sustained throughout the depression and increased by 50 per cent during the recovery. Output for the foreign market, however, declined heavily in the depression and never recovered the pre-depression level. Investment in industries catering to the home market and in residential structures constituted the core of British recovery. In this development the protective

tariff, as we have just noted, played a role. But it was also greatly encouraged by the quite phenomenally favorable terms of trade which the depression brought to England's doorstep. England, as a great importer of foodstuffs and raw materials, profited from the drastic world-wide decline in the prices of these commodities in relation to the prices of industrial products. "The wage and salary earners of the nation, after buying their food, drink, tobacco, and clothes, had something like £250 millions a year *more* left over in 1932 than in 1924-27." ⁶ In other words, the depressional decline in total payrolls was far more than offset by the decline in cost of living. Thus, the wage and salaried classes actually enjoyed collectively a larger purchasing power at the bottom of the depression than they had had in the twenties, and this increased sum was available for the purchase of domestic products. No other fact is more basic to an understanding of the causes of the British boom in housing and the new domestic industries.

Thus, various favorable factors—some accidental, others of a character which in the usual case could not be implemented as recovery measures—combined to bring the balanced budget program through to a successful conclusion. The depreciation of the pound, the conversion operations, the cheap money rates, the protective tariff, the backlog of capital goods shortages inherited from the depressed twenties, the favorable terms of trade must all be chalked down more or less to good fortune. In other circumstances the results might have been very different.

British Budget Large

Finally, and of special significance for fiscal policy, is the role of the British budget in the maintenance of purchasing power during the depression and in the recovery which followed. The important fact about the British budget is not that it was balanced, but rather that it is a *large* budget—the fact that a

⁶ The *Economist* (London), October 26, 1935.

very large percentage of national income is taxed away and spent by the government. . . . It is clear that the taxing away of such a large part of national income will have profound effects on the economic system—effects which will depend on the manner of taxation and on the way in which these funds are spent. . . . We are broadly aware of the fact that the system of British public finance is characterized by heavy progressive taxation and large expenditures on social services. The tendency of such a system would be to increase the share of consumption in national income and to decrease the share of investment, thus adding to the stability of the economic system.⁷

A profound shift has occurred, compared with the prewar period, in the ratio of consumption to income, at corresponding levels of employment. The Colwyn Committee found that prewar savings amounted to £350 to £400 millions. Taking account of the rise in prices and the increased population, an equivalent volume in the middle twenties would have amounted to £650 millions. Yet the estimates of savings for the middle twenties suggested a figure of only £450 millions, or at most £500 millions. Thus, at the prevailing value of money, savings had declined by some £150 millions to £200 millions.⁸ Professor Pigou,⁹ summarizing the data available in 1927, found that "as against 1911, total savings fell from about sixteen per cent to twelve or thirteen per cent of the total social income. . . ." Colin Clark's study of net investment, based on more adequate data, arrives at broadly similar results. In 1907 net investment was 12.2 per cent of national income, 8.1 per cent in 1924, and 7.3 per cent in 1937.¹⁰ According to the Report on Economic Conditions, issued by the Royal Economic Society, new capital issues declined from £308 millions in 1928–29 to £194 millions in 1936–37.

These figures disclose a remarkable shift in the ratio of sav-

⁷ Jászi, *op. cit.*, pp. 185–87.

⁸ Report of the Committee on National Debt and Taxation (Colwyn Committee), Cmd. 2800, 1927, p. 17.

⁹ A. C. Pigou, *The Economic Position of Great Britain*, Royal Economic Society, 1927, p. 22.

¹⁰ Colin Clark, *National Income and Outlay*, Macmillan, 1938, p. 185; and *Economic Journal*, September, 1938.

ings to income, or, otherwise stated, in the ratio of consumption to income. It is striking how the mere manner of stating this shift—as a consumption-income ratio or as a savings-income ratio—affects one's judgment about whether the shift can be regarded as a favorable or an unfavorable one. When stated as an increase in the consumption-income ratio, an optimistic note is struck; when stated as a savings-income ratio, traditional instinctive reaction suggests a pessimistic conclusion. So long as one could feel assured that savings would always find an embodiment in real investment, a high ratio of savings to income indicated a high rate of economic progress, but also at the same time, because of the cyclical variability in investment expenditures, a condition of instability. A high ratio of consumption to income indicates a probable gain in stability and a possibility also of fuller employment at the peak of the cycle movements. At any rate, such a ratio makes possible full employment at a relatively low level of new investment. Thus, if investment outlets are relatively meager, a high consumption-income ratio makes it easier to achieve full employment. Obviously, one encounters here a matter of great significance, of which due account must be taken if one wishes to compare the recovery of the thirties in England and in the United States.

The increased consumption-income ratio can apparently be accounted for mainly by reference to the changed tax structure and the growth of social service expenditures. In 1913-14, of incomes wholly earned, only 6.7 per cent of incomes of £5,000 were taken in taxes, only 8.4 per cent of incomes of £50,000, while for incomes half earned and half derived from investment the respective figures were 9.6 and 13.6 per cent. By 1925-26 taxes took from the £5,000 income class 23.2 per cent (when earned) and 29.5 per cent (when half earned), while for the £50,000 class the figures are 44.4 and 57.7. On the other hand, the percentage taken in taxes from the lower income classes had increased little, if at all. The relevant data are given below. Both direct and indirect taxes are included.

TABLE VIII

*Total Taxation: Percentage of Income*¹¹

<i>Income</i>	<i>Income Wholly Earned</i>	<i>Income Half Earned, Half Investment</i>
	<i>Per Cent</i>	<i>Per Cent</i>
<i>1913-14</i>		
£ 50	8.0	8.8
100	5.4	6.6
150	4.4	5.6
200	4.0	5.3
500	4.4	7.1
1,000	5.2	8.3
2,000	4.9	8.4
5,000	6.7	9.6
10,000	8.0	11.8
20,000	8.4	13.6
<i>1925-26</i>		
£ 100	11.9	13.0
150	11.6	12.7
200	10.2	11.3
500	6.2	8.4
1,000	11.0	14.4
2,000	15.2	19.3
5,000	23.2	29.5
10,000	31.2	40.1
20,000	37.5	48.7
50,000	44.4	57.7

Pigou noted that the drop in savings was very nearly equal to the excess of social service expenditures in 1924 over 1911.¹² In 1911-12 only 3.1 per cent of the national income was spent on social services, while 12.0 per cent was so expended in 1934-35.¹³ In 1913-14, according to Colin Clark,¹⁴ expendi-

¹¹ Report of the Committee on National Debt and Taxation, p. 95.

¹² A. C. Pigou, *The Economic Position of Great Britain* (1927), p. 22.

¹³ A. L. Bowley, *Wages and Income in the United Kingdom Since 1860* (1937); Annual Return of Social Services.

¹⁴ Colin Clark, *National Income and Outlay*, Macmillan, 1938.

tures benefiting the working classes amounted to £76 millions, and in 1935-36 to £429 millions. On the other hand, the total taxes borne by the well to do in 1913-14 amounted to £172 millions, and in 1935-36 to £685 millions. Clark estimates that before the war the taxation of the lower classes actually exceeded the social benefits derived from governmental expenditures. By 1929, however, they were taxed for only 85 per cent of the social benefits received, and by 1935 for only 79 per cent. According to his calculations the sum redistributed from the well to do to the lower income groups amounted to £91 millions in 1935-36, while Ursula Hicks,¹⁵ on the basis of later data, puts the figure at £110 to £115 millions.

In addition to the high level of consumption, including community consumption expenditures, social services, and the like, local governmental units in England have made important capital outlays on public projects and low-cost housing, financed in large part by borrowing. The gross debt of the local authorities in England and Wales increased from £800 millions in 1923 to £1,400 millions in 1934.¹⁶ Taking account of our greater population, this rise in local debt is very comparable with the annual rise in state and local debt in the United States in the decade of the twenties. In the thirties, however, state and local bodies in the United States, supported by federal aid, were able to reduce their net debt obligations.¹⁷

¹⁵ U. K. Hicks, *The Finance of British Government, 1920-1936*, Oxford University Press, 1938, p. 59.

¹⁶ Hicks, *op. cit.*, p. 130.

¹⁷ According to a computation (derived from the *Statistical Abstract for the United Kingdom*) made by the National Industrial Conference Board, *Studies in Enterprise and Social Progress*, p. 282, the total debt, national and local, increased from £8,965 billions in 1930 to £9,972 billions in 1938. At the normal rate of exchange, the increase in debt in eight years thus amounted to over \$4 billions. Translated into American magnitudes, our population being three times larger, this would be an increase in debt of \$12 billions. The low *percentage* increase in total public debt in Great Britain is often referred to, but the percent is low only because the total debt upon which the increase is calculated is very large.

Part Two

THE CHANGING ROLE OF FISCAL
POLICY

Chapter VI

FISCAL POLICY, NEW AND OLD

THE changing ideas about the nature and use of public credit, from ancient times through the early modern period, constitute a fascinating chapter in the history of thought. Scholastic theologians, like Thomas Aquinas, were bitterly opposed to loans.¹ This attitude was due not merely to the official church opposition to the payment of interest, but to a belief that public debt was itself immoral. Political philosophers of the early modern period continued to regard the prior accumulation of treasures as superior to borrowing. Jean Bodin, for example, approved only six sources of state revenue: the public domain, conquest, gifts (which are "rare"), annual contributions of allies, customs, and taxes. Traffic in rights and titles he considered pernicious, and borrowing at high interest rates "the ruin of princes." Emergencies should be met by accumulated hoards, and only war provided justification for extraordinary levies or loans.²

Thomas Hobbes was more realistic in his approach. He recognized the limitations of revenue from the public domain alone. In view of the widening scope of governmental expenditures, the monarch must resort to taxation, and occasionally even to public credit.³ Adam Smith reverted to the

¹ Cf. E. R. A. Seligman, article on "Public Finance," in the *Encyclopedia of the Social Sciences*, Vol. 12, p. 641.

² *Six livres de la Republique*, Book VI, Chapter 2, especially pp. 655-56, 661, 671, 680-83, 690-92.

³ *English Works of Thomas Hobbes*, ed. Molesworth; Volume VI, Chapter 1. A Dialogue Between a Philosopher and a Student of the Common Laws of England, pp. 10-22.

older tradition, parting company on this point with Hobbes. He maintained that only "the want of parsimony in time of peace imposes the necessity of contracting debt in time of war." He observed that with the growth of commerce and manufactures European monarchs have unfortunately lost their "disposition to save," while the upkeep of standing armies and needless luxuries absorb ordinary revenue. Individuals follow the example of the state by running into debt, and "the enormous debts . . . will in the long-run probably ruin all the great nations of Europe."⁴

Hume likewise compared contemporary financing with the ancient practice of accumulating hoards, much to the disadvantage of contemporary methods. "Our modern expedient," he wrote, "is to mortgage the public revenues . . . a practice which appears ruinous." In former times the "opening of the public treasure" in wartime at least "served as a temporary encouragement to industry, and atoned, in some degree, for the inevitable calamities of war." Loan-financed wars are doubly calamitous, for the similarity between the "circulation" of "stocks" and the "circulation" of goods and money is illusory. The taxes raised to pay interest on the loans are a check on industry. Government securities have all the disadvantages of paper credit, give rise to speculation, confer advantages on the city at the expense of the nation, make the country dependent upon foreign financiers, and encourage "a useless and inactive life."⁵

Wars and the Rise of Credit Institutions

Whatever the ideas of the political philosophers, the expansion of commerce and the undertaking of wars were from the very beginning of the Middle Ages closely associated with loan financing, both public and private. Through several centuries credit institutions were slowly developing to meet

⁴ *The Wealth of Nations*, Book V, Chapter 3, Stuart Edition, pp. 724-27.

⁵ *Essays and Treatises on Several Subjects*, Volume II, London, 1760. Essay "Of Public Credit," especially pp. 134-42.

growing needs, leading ultimately to an organized capital market dominated by the stock exchanges and by large banks, operating on a fractional reserve basis. Through the development of these institutions it became possible to engage in extraordinary expenditures, such as those incurred in war, without imposing confiscatory taxes. The development of credit institutions made possible the financing of wars in a manner which added stimulus to the economy through the net additions of purchasing power injected into the community through the use of credit. To be sure, the dose of credit was frequently excessive, leading to price inflation. At any rate, public borrowing for war purposes removed the necessity for unduly severe and quasi-confiscatory exactions upon private wealth and income, and instead furnished a powerful stimulant to trade and enterprise. In so far as they were fought on foreign soil and with hired mercenaries, wars came to be regarded as by no means an unmixed evil. Indeed, the whole history from the late seventeenth century to the end of the Napoleonic Wars indicates a high correlation between: (a) the expenditures and use of public credit to which war gave rise, and (b) brisk trade, rising economic activity, and business prosperity. From the standpoint of the sovereign, wars were usually fought for dynastic reasons, for glory of empire, and frequently for acquisition of territory. The secondary consequences of wars during this earlier period in the history of capitalism are such as to give much support to the thesis that in this period in history wars stimulated the development of industrialism. This relatively complacent view of war was, however, shattered by the terrible experience of the first World War. Only in consequence of the disastrous effect on the economic system as a whole, and the revolutionary changes which emerged from the first World War, did there at last arise a conviction, in at least a large part of the Western world, that under modern conditions wars must be regarded as an economic, no less than a moral and social, disaster.

Thus, the emergence of private and especially public credit institutions aided the waging of expensive wars, and these, in

turn, powerfully reinforced the development of the modern credit economy.

In 1691 the entire national debt in England was only £3 millions. By 1815 it amounted to over £800 millions. This enormous increase in the public debt created a haven of refuge—for capitalists both in England and abroad—for the investment of funds in a period of risk and uncertainty created by the international upheaval. The buying and selling of government obligations led to the development of the stock exchange, and throughout the eighteenth century dealings on the exchange were confined almost entirely to government securities. As late as 1843, 70 per cent of the securities listed on the London Stock Exchange consisted of securities of the English government, while an additional 10 per cent was composed of the debt obligations of foreign governments. Even as late as 1875 slightly over two thirds of the securities listed on the London Stock Exchange consisted of governmental securities.⁶

Moreover, in the very early stages of the development of modern industrialism public investments financed by public borrowing played a quite extraordinary role. In the case of the United States, internal improvements, such as turnpikes, canals, and, at the very beginning, railroads, were financed by lavish state expenditures. These wildly speculative promotional activities based on excessive optimism brought financial ruin, as is well known, to many American states and other local governmental units, leading to widespread defaults. But it must not be forgotten that, while individual investors—in very large part foreigners—lost their savings in these defaults, from a social standpoint these promotional developments played an important role in the emergence of the rapidly expanding industrialism. On the Continent of Europe the enormous financial needs incident to the development of modern systems of transportation, in particular the railroad, could not be financed from private sources under the prevailing state of financial institutional develop-

⁶ G. W. Edwards, *The Evolution of Finance Capitalism*, Longmans, 1938.

ment. The great transportation undertakings, therefore, in contrast with the smaller requirements of manufacturing, were almost everywhere on the Continent financed by public borrowing and became established state enterprises. The tradition of an efficient bureaucratic civil service doubtless played an important role in the success of these ventures in contrast with the financially disastrous public ventures undertaken in America.

In England and the United States, however, and in the subsequent emergence of the manufacturing phases of modern industrialism on the Continent, governmental securities were increasingly supplanted, relatively speaking, by the emergence of the corporation and the issuance of private securities. Thus, the nineteenth century, particularly the last half, witnessed a prodigious growth of private corporate securities and the development (almost to the point of the exclusion of governmental credit as a factor in economic life) of private capitalism. In consequence of the first World War and its aftermath, and particularly as a result of the unprecedented unemployment incident to the Great Depression, public credit as an instrument of economic policy has again come powerfully to the fore. Thus, we witness a cycle in the role of public credit in the history of modern industrialism. Starting with public credit playing a major role in the period of the early rise of private capitalism, we now again see a re-emergence of the role of public credit in economic life.

We have noted how the emergence of public credit was related to the rise of war expenditures. Historically, this has been, and still remains, by far the major cause of the rise of public debt. The enormous increase in public revenues derived from taxes is, however, mainly a function of the widening scope of governmental activities, though in part it is a result of the growing necessity of financing from taxes the necessary interest payments on the public debt created mainly by war. Government services, starting from the limited function of giving protection to life and property, expanded under the requirements of a growing industrial system, the rapid

agglomeration of population in huge cities, and the increasing problems of organization incident to these developments. Collective action had to be taken to protect against disaster from fire and flood; to provide for sanitation and hospitalization; to protect the public health and prevent the spread of contagious diseases; to provide methods of communication in the development of roads, postal services, and, in many countries, telegraph and telephone; to provide for protection against crime; and, increasingly with the rise of democracy, to provide on an ever more lavish scale for the education of the entire population. Services which, in large part, had formerly been provided by private agencies eventually had to be taken over by the government. Thus, provision for self-protection was transformed into a public police force. Settlement of private disputes through mutual arbitration or dueling was transferred to public courts, private education was transferred to public schools, private hospitals to public hospitals, and increasingly, particularly since the Great Depression, private charity has given way to enormous expenditures on public relief and social insurance. Moreover, the development of modern standards of living and a huge urban population have made necessary large expenditures on community consumers' capital in the form of playgrounds, recreational facilities, public schools, and public buildings of various types. Public activities have, therefore, spread from current services to the development of large expensive capital projects devoted to community consumption.

Public Finance Under Early Capitalism

The nineteenth century was preoccupied with the problem of attaining a volume of savings adequate for the requirements of a rapidly expanding economy. The dynamics of population growth and technological progress placed a premium upon freedom of enterprise and private initiative. Fiscal policy aimed at the least possible interference with the functioning of the private, capitalistic economy. The Jeffersonian ideal in America and the Gladstonian in England alike sought

to minimize to the utmost the functions of governments so that, as far as possible, the entire disposable income might be expended by the individual citizen, whether for consumption or investment, for such ends as he might deem advisable. The productive resources of the community, it was believed, would be utilized most effectively if guided by a market responsive to the choices of individuals free to use as they wished their personal incomes. Public functions per se were regarded as a necessary evil. Taxes were "unproductive" expenditures, representing an unfortunate waste in the process of production. The flow of goods and services which the citizenry might enjoy could always be increased by tax reduction. Sound fiscal policy called for two things: (1) the reduction of public expenditures to the utmost possible limit, and (2) a tax structure which disturbed the pricing system as little as possible, including the pricing of the factors of production, thereby leaving intact the relative distribution of income as it would be in a tax-free society.

Such was the ideal of public finance in the heyday of private capitalism. The ideal was, of course, never fully realized. As the "high" capitalistic period receded before the advance of state interventionism, taxation was seized upon as a convenient and highly effective instrument for the regulation and control of economic life. Already in the mercantilist period taxation had been used as a police measure designed to prohibit certain activities regarded as undesirable, whether in the field of consumption or production.

Changing Role of Fiscal Policy

A far more revolutionary aim of social policy now appeared above the horizon, the full implications of which were at first not wholly visible. Indeed, it was introduced at first largely as a by-product of the imperious necessity of financing great wars and not in response to a well-thought-out social philosophy. While avowed socialists had their eyes fixed on the goal of social ownership of the means of production, the course of

events had unexpectedly forged a powerful instrument for the socialization of income. The severe requirements of national defense had demonstrated the extraordinary possibilities of progressive income and inheritance taxation and had thus prepared the ground for the utilization of tax measures to accomplish far-reaching social ends, such as the more equal distribution of income and the expansion of collective consumption by the community as a whole.

In the meantime, devastating depressions brought to the foreground as never before the problem of business instability. Whereas it had been the concern of economic policy to raise the standard of living, now attention was centered on the promotion of security and stability. At first, main reliance was placed upon monetary policy, but the exigencies of the Great Depression compelled (or, at any rate, led to) enormous expenditures for the relief of the unemployed. These were made more willingly in the belief that they served the double purpose of giving relief and also of "curing" the depression. Thus, fiscal policy was forced into service as a compensatory device more by accident than by design. It was, therefore, not surprising that experience in the implementation of this policy turned up some rather surprising results. Part of the consequences, it appears, were due to the applications of orthodox canons of fiscal policy to a situation for which they were totally unsuited. It was the old story of putting new wine into old bottles.

Back of the menacing unfolding of violent industrial fluctuations there now appeared the specter of chronic unemployment. Many, perhaps most, competent observers professed to doubt its reality and conceived it to be an illusion springing from the distracted psychological atmosphere created by the Great Depression. Discussions with respect to the phenomena of "long waves" and of structural changes in the economy, together with the increasing development of the theoretical tools of dynamic analysis, produced challenging hypotheses in explanation of chronic or secular underemployment. And while the debate progressed, all the leading governments of

the world were continuing to pour out vast funds for armaments or for the relief of depression—whatever its character, whether temporary or secular. Government debt was everywhere mounting and fiscal policy was being drafted willy-nilly to serve as an instrument to increase the volume of employment.

There is thus emerging a new aim of fiscal policy, vigorously assailed by some and staunchly defended by others—the aim of ensuring the full employment of the factors of production. This policy involves greatly enlarged governmental expenditures. Some would finance these wholly from progressive taxation, once a full-income level had been achieved, and thus “balance the budget.” Others would finance them partly from a progressive rise in the public debt. The possible limits of this development are certainly far wider than is usually supposed, owing partly to the low rates of interest which, under an appropriate Central Bank policy, are adequate to tempt idle funds into short-term government obligations, and partly to the fact that taxes raised to pay interest on a public debt domestically held flow back again to the community as a part of the income receipts of individuals. The larger aspects of this problem and its implications in terms of the distribution of income and the price structure will be discussed subsequently in this volume.

Chapter VII

THE CHANGING CHARACTER OF GOVERNMENTAL EXPENDITURES

THE major developments which peculiarly characterize the economic life of the twentieth century, particularly after 1914, are to a large extent merely continuations of trends which were already present in the nineteenth century and which differentiate the industrial-capitalist era from the old regime. But the differential rate of change in the various areas of economic life is itself sufficient to yield us a new kind of world qualitatively different from that of the last century. And, in this respect, the rapidly growing role of government throughout the Western world above all challenges attention.

The growing activities of government could not fail to result in a great increase in governmental expenditures. And the changing character of expenditures is equally significant. In this connection some illuminating contrasts are evident between the prewar decade, the decade of the twenties, and the decade of the thirties.

In the United States there are three levels of government: federal, state, and local. The changing fiscal importance of each of these levels of government, as indicated in the size of expenditures, is stated in the table on page 119.

From this table it is evident that some significant changes have occurred. In 1929 state expenditures had increased relatively more than federal or local, compared with 1913. In 1937 increases of federal and state expenditures over 1913 were not significantly different, but both had far outstripped

TABLE IX

Governmental Expenditures in the United States¹

	millions of dollars			1929 as multiple of 1913	1937 as multiple of 1913
	1913	1929	1937		
Federal ²	964	3,735	9,080	4.0	9.3
Federal (Post-office expenditures, ex- cept postal defi- cit, omitted)	703	3,047	8,349	4.3	11.9
State ³	379	1,955	3,068	5.2	8.1
Local ⁴	1,846	6,719	6,340	3.6	3.4

the increase in local expenditures. In absolute figures, local expenditures in 1913 were twice as large as federal, while the federal outlays, in turn, were more than twice as large as the state expenditures. But, by 1937, the ratio ran approximately 3 for the federal, 2 for the local units, and 1 for the states.

Highways and Education

The large relative growth of state expenditures from 1913 to 1929 is the result mainly of increased outlays on highways and on education. The development of highways and of education had a unique history in the three decades ending in 1930. As late as 1913, state governments were spending only \$28 millions on highways, while, in 1929, \$669 millions were

¹ Sources: *Annual Report of the Secretary of the Treasury*; U.S. Bureau of the Census, *Wealth, Public Debt, and Taxation, 1913*; *Financial Statistics of States, 1915*; U.S. Bureau of the Census, Press Releases, *Summary of Finances of State Governments, 1937*, Nos. 1 and 17; *Report of the Commissioner of Education, 1914*; National Industrial Conference Board, *Cost of Government in the United States*; *Statistical Abstract of the United States*.

² Federal expenditures include all post-office expenditures, but exclude debt retirement, refunds of receipts, and District of Columbia expenditures.

³ State expenditures exclude federal grants received, but include state grants to local governments.

⁴ Local government expenditures exclude subsidies and grants received.

expended. State expenditures for education were only \$61 millions in 1902, \$129 millions in 1913, and had risen to \$549 millions in 1929. In this thirty-year span a revolution had occurred in methods of transportation and also in education.

The coming of the automobile compelled the construction of an entirely new and extremely expensive system of highways, the building of which is comparable in magnitude with the gigantic task in an earlier period of covering the entire country with a network of railroads. In a like manner, these three decades witnessed a profound revolution in the system of secondary education. In 1900 the total attendance in secondary schools in America was only 696,000 boys and girls; by 1930 it was 4,800,000, and, by 1934, 6,088,000. Whereas in 1900 only 10.2 per cent of the boys and girls from fourteen to seventeen years of age inclusive were in high school, by 1930, 47.7 per cent, and by 1934, 56.2 per cent, attended.⁵ This remarkable development bears testimony, perhaps more than any other single fact, to the prodigious rise in the American standard of living from 1900 to 1930.

Whereas formerly the local governments provided almost exclusively for highways and education, the tasks imposed by the development of these decades made the burden too heavy. Property taxes, the main source of local revenue, were not adequate. Hence the increasing sharing of the burden by the states, and also, especially with respect to highways, by the federal government. Altogether, expenditures on highways by all governments increased from \$182 millions in 1902 to \$1,936 millions in 1929, more than a tenfold increase. Meanwhile, expenditures on education increased from \$281 millions to \$2,490 millions, approximately a ninefold increase.

Social Welfare and Unemployment Relief

A third category of growing importance is that of social welfare, including relief for the poor, aged, blind, and sick; mothers' and widows' pensions; care of children; public

⁵ *Statistical Abstract of the United States*, 1936, p. 108.

health; hospitals; sanitation (including sewerage disposal, refuse collection and disposal); institutions for the care of the handicapped; recreation (including parks and playgrounds); pensions to civil employees; and workmen's compensation. Expenditures on these items amounted to only \$170 millions in 1902, but had risen to \$1,360 millions by 1929. But as late as 1929 most of these outlays were by local governments.

A fourth category disclosing an enormous expansion of governmental expenditures is that of public service enterprises. These include water, electricity, gas, rapid transit and other transportation, and all other enterprises operated on a commercial basis. Expenditures by all governments for these purposes increased from \$199 millions in 1902 to \$1,461 millions in 1929.

A summary view of the four categories discussed above—categories which peculiarly reveal the shift in government functions during the current century—is given for four intervals, covering nearly four decades, in Table X.

TABLE X

*Governmental Expenditures * (Federal, State, and Local)*
(millions of dollars)

<i>Expenditure category</i>	<i>1902</i>	<i>1913</i>	<i>1929</i>	<i>1937</i>
Highways	182	426	1,936	1,818
Education	282	565	2,490	2,372
Social Welfare	170	342	1,360	5,098
Public Service Enterprises	199	489	1,461	1,778

One, and only one, of these categories leaped to a sharply higher level during the last decade—social welfare. And this illustrates the characteristic shift in the decade of the thirties.

* Sources: U.S. Bureau of the Census, *Wealth, Public Debt and Taxation*, 1902; Report of the U.S. Commissioner of Education, 1903; M. O. Eldridge, *Public Roads Mileage, Revenues and Expenditures in the U.S. in 1904* (U.S. Office of Public Roads Bulletin no. 32, 1907); *Financial Statistics of Cities*, 1905; and references cited on p. 119.

While highways, education, social welfare, and public service enterprises represent the great fields of growth up to the end of the twenties, the extraordinary relief load—both urban and rural—growing out of the Great Depression offers the main explanation for the great rise of governmental expenditures during the thirties.

But the new burden had to be carried almost exclusively by the federal government. The financial incapacity of the state and local governments, resulting from the fall of the national income in the early thirties to half its former level, compelled retrenchment. Local governments can carry on their fiscal obligations quite well when the national income is high and rising. But only the federal government—and, to a lesser degree, state governments—with its vastly greater taxing powers (especially with respect to income taxation) and its capacity for borrowing, can carry on and even expand its expenditures in the face of a low and falling national income.

State and local expenditures for education declined from \$2.5 billions in 1929 to \$2.3 in 1937, while expenditures on highways declined from \$1.8 billions in 1929 to \$1.4 billions in 1937. State and local capital outlays of all sorts (including those on education and highways) declined from \$3.0 billions to \$1.4 billions.⁷

Total governmental expenditures increased from \$12.4 billions in 1929 to \$18.5 billions in 1937. But the expenditures of local governments fell from \$6.7 billions in 1929 to \$6.3 billions in 1937. Federal expenditures, however, increased from \$3.7 billions to \$9.1 billions in 1937, while those of state governments increased from \$2.0 in 1929 to \$3.1 billions in 1937.

From January, 1933, to July, 1938, total federal contributions to various relief and assistance measures amounted to \$11,120,000,000, while state and local contributions amounted

⁷ Hearings before the Temporary National Economic Committee, Part 9, p. 4064.

to \$4,195,000,000. The data for each year are as follows, in millions of dollars: *

TABLE XI
(in millions of dollars)

<i>Year</i>	<i>Federal</i>	<i>State and Local</i>
1933	907	401
1934	2,087	577
1935	2,108	627
1936	2,664	895
1937	2,170	1,048
1938 (six months)	1,184	646

An analysis of the growth of expenditures since 1930 relates, therefore, almost exclusively to federal expenditures springing from the necessity of coping with the problems arising from unemployment and related recovery measures. The emergency made it necessary for the federal government to come to the aid of state and local governments to provide for relief for the unemployed; and the unprecedented economic difficulties confronting industry and agriculture alike led the government into a vast range of experiments intended to restore the national income. Unemployment relief expenditures of the federal government leaped to \$1.8 billions in 1934, averaged \$2.4 billions in the years 1935-37, and amounted to \$2.0 billions in 1938, \$2.7 in 1939, and \$2.0 billions in 1940. The Agricultural Adjustment program rose from \$289 millions in 1934 to \$712 millions in 1935, \$782 millions in 1939, and \$1,017 millions in 1940. These are the major developments in federal expenditures growing out of the depression emergency. Public works expenditures, including grants to state and local bodies, rose from \$388 millions in 1931 to \$719 millions in 1935 and \$1.062 millions in 1937. Loans and subscriptions to the capital stock of governmental agencies (made

* Works Progress Administration, *Report on Progress of the W.P.A. Program*, June 30, 1938, p. 113.

directly from the federal budget) amounted to \$885 millions in 1932 and \$882 millions in 1934. These lending agencies, largely from their own funds obtained by issuing their own obligations (guaranteed by the federal government), in turn poured billions of dollars into the work of rehabilitation.

Two major shifts in expenditures may thus be noted from the decade of the twenties to that of the thirties. The first has to do with a large relative increase in federal expenditures in relation to state and local expenditures. The second has to do with a change in the underlying reasons for increased expenditures. In the twenties the rise in expenditures was due largely to certain demands incident to a changing or rising standard of living, notably expenditures for roads and education. In the thirties the increased expenditures grew out of an effort to overcome the Great Depression or to mitigate its ravaging effects on the standard of living, especially of the unemployed.

Unemployment relief constitutes the biggest single item of expenditure under the New Deal, with a total for the seven years 1934-40 of \$15.8 billions. Public works of all sorts absorbed \$6.0 billions, the Agricultural Adjustment program \$4.2 billions. Unemployment relief, aid to agriculture, and public works designed to promote employment together account for \$26.0 billions, or nearly 50 per cent of the total federal expenditures in 1934-40.

Chapter VIII

THE TAX STRUCTURE

THE tax structure in the United States has undergone quite revolutionary changes during the last quarter of a century. Until 1914 tax revenue was derived almost wholly from property taxes and from customs duties and excises.

The burden of taxes was, accordingly, distributed with little relation to ability to pay. Customs and excises constituted in 1902 nearly one half of total tax receipts of all governments in the United States, and nearly 40 per cent in 1913. In so far as such taxes affect the prices of commodities of general consumption, the tax burden represents a diminishing percentage of income the farther one moves into the upper-income ranges. And even property taxes—and this applies particularly to rented residences—are, in large part, shifted by property owners to the general public. Thus, a tax structure based upon property and consumption taxes is likely to be heavily regressive and burdensome upon the low-income groups of the community.

Progressive vs. Regressive Taxation

The federal income tax was introduced in 1914. During the war surtax rates on upper-bracket incomes were sharply raised, and this helped to diminish the regressive character of the general tax structure. But indirect taxes weighing largely on consumption continued to be levied, and, moreover, the rates on the moderately well-to-do and lower rich class were comparatively low. Accordingly, the tax structure as a whole

did not reveal any great progressivity over the entire income range, even though high surtax rates were imposed on the highest brackets. The introduction of the federal income tax—a reform which came astoundingly late in American history—did, nevertheless, shift the burden of taxation much more largely upon those most able to bear it.

In the postwar decade the high surtax rates were drastically reduced. The rates were again raised in 1932, and in 1935 the high surtax rates of the war period were restored and even exceeded. In Table XII the effective rates applicable to each income level in the three years 1918, 1929, and 1937 are given. This table reveals the extremely low rates which prevailed in 1929 in contrast to those of 1918 and 1937. The 1937 rates were relatively lighter on all incomes below \$25,000 than those of 1918, but slightly higher for incomes above this level.

TABLE XII

*Effective Tax Rate on Individual Net Incomes*¹

<i>Net Income Classes</i> <i>(Thousands of dollars)</i>	<i>(Per cent)</i>		
	<i>1918</i>	<i>1929</i>	<i>1937</i>
Under 1	0.02	0.23
1 under 2	1.19	.04	.48
2 under 3	.98	.07	.39
3 under 5	2.35	.05	.84
5 under 10	4.34	.21	2.63
10 under 25	8.20	1.49	6.66
25 under 50	13.32	5.24	13.60
50 under 100	21.69	9.77	23.60
100 under 150	33.68	12.92	37.49
150 under 300	44.64	14.64	48.06
300 under 500	54.77	15.49	57.45
500 under 1,000	58.65	15.86	64.82
1,000 and over	64.65	15.76	71.95

Even the 1935 rates were relatively low on the so-called middle brackets, from \$5,000 to \$100,000. In view of the

¹ U.S. Treasury Department, *Statistics of Income for 1937*, Part 1, pp. 40-41.

greatly increased need for revenue resulting from the growth of governmental expenditures, and in view of the Social Security program, higher rates in this income range might have been expected. Increases were made, but in large part resort was had to consumption and payroll taxes. On balance, this tended to make the tax structure, as a whole, weigh more heavily on consumption than had been the case even in the twenties.

This fact can be strikingly shown from a table published in the *Annual Report of the Secretary of the Treasury* for the fiscal year 1940. An estimate is made of the federal tax liabilities for the calendar year 1941 based on the tax structures prevailing: (a) under the laws of May, 1932, and (b) under the laws of December, 1940. On the basis of the revenue acts in force in early 1932, it is estimated that \$1,871 millions might be collected in taxes on individual incomes, estates, and gifts, and on corporate incomes and profits, assuming a national income equal to that expected in calendar 1941. On the same basis, \$991 millions might be expected from consumption taxes, including liquor, tobacco, miscellaneous internal revenue, and customs duties. Thus, the tax structure as of 1932 would yield a revenue (based on the expected 1941 income) of which 35 per cent was consumption taxes. Considering the sharp increase in the rates on individual incomes, estates, and gifts, and on corporate incomes and excess profits, notably in the Revenue Acts of 1935 and of 1940, one might have expected a drastic reduction in the ratio of consumption to total taxes. This, however, is not the case. Based on the tax law in effect on December 31, 1940, it is estimated that \$5,953 millions could be collected in corporate income and profits taxes and in individual income, estate, and gift taxes, while \$3,660 millions might be collected in consumption taxes (including those listed above) and taxes on payrolls. Thus, on the basis of the revenue laws in force at the end of 1940, 38 per cent of total federal taxes could be regarded as mainly consumption taxes. This fact is all the more striking in view of the relatively high income—the anticipated income of 1941—

on which the estimates are based. The higher the income, the greater the potency of a progressive income tax structure.

To offset so effectively the greater progressivity of the income tax in 1940 compared with 1932 it is evident that the taxes burdening consumption must have been very sharply increased. The repeal of the Eighteenth Amendment, together with increases in liquor tax rates, accounts for about \$800 millions of the increase in the consumption taxes estimated in the hypothetical case referred to above. Miscellaneous internal revenue items, including gasoline taxes and manufacturers' excises, account for another \$800 millions, while payroll taxes, including old age and railroad unemployment insurance, account for \$950 millions.²

Turning from the comparison of the tax structure of early 1932 with that of late 1940, as revealed in the estimated tax liabilities of these two structures applied to a high national income, such as that expected in calendar 1941, it is of interest to consider the *actual* tax collections in the fiscal years 1933-40. The following table shows the relation, year by year, of consumption taxes (as defined above, including pay-

TABLE XIII

(in millions)

<i>Fiscal Year</i>	<i>Consumption and Payroll Taxes</i>	<i>Total Tax Revenues</i>
1933	\$1,075	\$2,080
1934	1,889	3,116
1935	2,211	3,800
1936	2,000	4,116
1937	2,478	5,294
1938	2,837	6,242
1939	2,804	5,668
1940	3,039	5,925

² Equally striking is the great strength of the tax structure in 1940 compared with that of 1932. On the basis of the anticipated national income of 1941, the tax structure of 1932 would yield only \$2,862 millions, while the tax structure of 1940 would yield \$9,613 millions.

roll taxes) to total tax revenues for this eight-year period.

The broad sweep of changes in the tax structure during the last four decades can be seen from a few summary tables disclosing the main tendencies at work. First, let us consider the tax structure, federal, state, and local, at four intervals: at the turn of the century, pre-World War I, at the end of the twenties, and pre-World War II. All taxes are grouped into four categories: (1) property taxes, (2) income, corporation, inheritance and gift taxes, (3) consumption taxes, and (4) payroll taxes.³

TABLE XIV
*Federal, State and Local Tax Revenues*⁴
(in millions)

	1902	1913	1930	1938
Property	\$ 707	\$1,440	\$4,959	\$4,745
Income, ⁵ Inheritance, Gift, and				
Corporation Taxes	29	77	2,866	4,107
Consumption Taxes:	651	859	2,600	4,478
Motor Fuel and Vehicles,				
Liquor and Tobacco,				
Sales and other excises,				
Customs				
Payroll Taxes				1,502
Total Taxes	\$1,387	\$2,376	\$10,425	\$14,832

³ Some difficulties are necessarily encountered in fitting all taxes into these four categories, and some arbitrary classification becomes necessary. Nevertheless, the broad conclusions stand out clearly and are but little modified by these somewhat arbitrary decisions.

⁴ Sources: *Annual Reports of the Secretary of the Treasury*; U.S. Bureau of the Census, *Wealth, Public Debt and Taxation*, and *Financial Statistics of States*; *Tax Policy Magazine*, December, 1938-January, 1939. National Industrial Conference Board, *Cost of Government in the United States, 1929-30*; U.S. Bureau of the Census; *Financial Statistics of Cities*; *Dun's Review*, July, 1939.

⁵ Poll and occupation taxes, inconsequential in amounts, ranging from \$7 millions in 1938 to \$26 millions in 1930, are included here.

Relative to 1902, property taxes and consumption taxes had increased in 1938 by precisely the same multiple, 6.7. Relative to 1913, however, the multiple for property taxes was 3.3, while that for consumption taxes was 5.1. Income, inheritance, gift, and corporation taxes had risen by 1938 from insignificant amounts in 1902 and 1913 to a figure comparable with property and consumption taxes.

Relative to 1930, property taxes were slightly lower in 1938. Consumption taxes had, however, increased by a multiple of 1.67, and income, inheritance and gift, and corporation taxes by a multiple of 1.43.

Consumption taxes constituted 36 per cent of total taxes in 1913, and 33 per cent in 1938, social security taxes excluded. Consumption and social security taxes together amounted to 40 per cent of the total in 1938.

Such, in broad outlines, are the major shifts in the tax structure as a whole, including all governments. But it will be useful also to consider the main tendencies at each level—federal, state, and local. With respect to local governments, there are no significant changes to report. The property tax remains, as before, the almost exclusive source of tax revenue. Sales taxes and other excises have been added in recent years, but the receipts from these sources in 1938 were less than one twelfth of the sum received from property taxes. Local property taxes declined slightly during the thirties, but were, nevertheless, more than sevenfold the amount collected in 1902 and $3\frac{1}{2}$ times that of 1913. Service receipts increased greatly during the twenties, reaching a level more than ten times that of 1902 and nearly five times that of 1913. This latter increase represents the growth of public service enterprises, water, electricity, gas, rapid transit, and other enterprises operated on a commercial basis. The data relative to tax revenues are presented in Table XV on page 131.

In contrast to the situation with respect to local revenues, very striking changes have occurred over the last three decades in state taxation. In the first place, state tax receipts have in-

TABLE XV
Local Tax Revenues
 (in millions)

	1902	1913	1930	1938
Property	\$625	\$1,300	\$4,614	\$4,531
Corporation, Inheritance, Poll, and Occupational Taxes	25	31	171	
Consumption Taxes:	58	82	232	359
Motor Fuel and Vehicles, Liquor and Tobacco, Sales and other excises				
Total Taxes	\$708	\$1,413	\$5,017	\$4,890

creased enormously, being twenty-five times larger in 1938 than in 1902. With respect to sources, until the first World War, property taxes represented about half the total. By 1930, income, inheritance, and corporation tax receipts combined were more than twice as large as those derived from property.

TABLE XVI
State Tax Revenues
 (in millions)

	1902	1913	1930	1938
Property	\$ 82	\$ 140	\$ 345	\$ 214
Income, Inheritance, and Cor- poration Taxes	54	124	725	928
Consumption Taxes:	19	36	711	2,023
Motor Fuel and Vehicles, Liquor and Tobacco, Sales and other excises				
Payroll Taxes				748
Total Taxes	\$155	\$300	\$1,781	\$3,913

The same holds for gasoline and sales taxes and other excises. And, by 1938, these consumption taxes had again tripled, as disclosed in Table XVI.

Equally significant are the changes in federal taxation. Prior to the first World War almost the exclusive sources of revenue were customs duties and excises—about equally divided. By 1930, however, individual and corporate income taxes were far and away more important sources of revenue. But, between 1930 and 1938, federal consumption taxes (heavily, liquor and tobacco) doubled, and were two thirds of the income, estate, and corporation taxes combined. And there were added, moreover, the social security taxes. Table XVII on federal revenues follows:

TABLE XVII
Federal Tax Revenues
(in millions)

	1902	1913	1930	1938
Income, Estate (and Gift), and Corporation Taxes	\$ 5	\$ 35	\$2,475	\$3,179
Consumption Taxes:	254	628	1,152	2,096
Motor Fuel and Vehicles, Liquor and Tobacco, Excises and Customs				
Payroll Taxes				754
Total Taxes	\$259	\$663	\$3,627	\$6,029

It is of interest to note that in 1938 the federal consumption taxes were almost precisely equal to state consumption taxes, each being around \$2 billions. Moreover, in each case payroll taxes of about \$750 millions were collected. With respect to income, inheritance, and corporation taxes, the states collected relatively little compared with the federal government. The main sources of tax revenue are the same with respect to the state governments and the federal government. Both rely

heavily on consumption taxes, but the federal government places a much larger reliance on corporate and individual income taxes.

Federal and state tax revenues have shown greater capacity for expansion than local tax revenues. Confronted with a difficult fiscal situation, local units have received increasing grants from the state and federal governments. Thus, in 1938, states made grants to local bodies amounting to \$1,250 millions, while the federal government made regular grants to states of nearly \$600 millions, and to local governments of \$125 millions. In addition, federal emergency expenditures, amounting to nearly \$1 billions annually for W.P.A., C.C.C., N.Y.A., P.W.A. grants, and agriculture, greatly relieved the fiscal position of both state and local governments.

Federal-state-local fiscal relations present a major problem currently and in the immediate future. Growing social responsibilities have been forced upon the state and local governments by the unprecedented volume of unemployment and by the progress of social reform. These responsibilities the local governments cannot carry without resort to heavy consumption taxes. Thus, for example, many states have been compelled to levy or to increase sales taxes in order to finance the Old Age Assistance program. If we are to cure this malady, either the federal government will have to take over more functions, or it will have to assume a larger responsibility with respect to the financing of social welfare projects.

Federal, state, and local consumption taxes (see table on page 129) amounted to the sum of \$4.3 billions. These include sales taxes and other excises, taxes on motor fuel and motor vehicles, liquor, and tobacco. In addition, \$1.5 billions of payroll taxes were collected, also largely abstracted from consumption. If we include these, we reach the vast total of \$5.8 billions withdrawn through taxation from the stream of consumption expenditures. Such taxes are definitely deflationary, impose a heavy drag on the economy, and tend to prevent full employment.

The growing importance of consumption taxes has reversed the trend toward a more progressive tax structure which began with the federal income tax of 1914. Taking all taxes into account—federal, state, and local—the structure does not begin to be progressive until an income of \$10,000 is reached. As far as state and local taxes, considered as a unit, are concerned, the tax rate structure remains apparently strictly proportional to income throughout the whole range from the \$500 income to incomes of over \$20,000. The federal tax structure begins to be fairly progressive at the \$10,000 income level. The relevant data are disclosed in Table XVIII below.

TABLE XVIII
The American Tax Structure *

<i>Income Class</i>	<i>Taxes as Percent of Income</i>		
	<i>Federal</i>	<i>State and Local</i>	<i>Total</i>
\$500 to \$1,000	6.6	11.4	18.0
1,000 to 1,500	6.4	10.9	17.3
1,500 to 2,000	6.6	11.2	17.8
2,000 to 3,000	6.4	11.1	17.5
3,000 to 5,000	7.0	10.6	17.6
5,000 to 10,000	8.4	9.5	17.9
10,000 to 15,000	14.9	10.6	25.5
15,000 to 20,000	19.8	11.9	31.7
20,000 and over	27.2	10.6	37.8

Apparently the American tax structure, taken as a whole and including both direct and indirect taxes, is far less progressive than is commonly supposed.

* See Colm and Tarasov, *Who Pays the Taxes?*, Temporary National Economic Committee, Monograph No. 3, 1940.

Chapter IX

THE GROWTH AND ROLE OF PUBLIC DEBT

1. The Rise of Public Debt

HISTORICALLY, it is clear that opposition to public debt, like the medieval opposition to interest, gradually broke down by reason of exigencies which appeared more or less uncontrollable. Thus, state borrowing entered as a by-product mainly of the increasingly costly outlays incident to modern warfare. It was not a question of theoretical principles but of practical, hard necessities. The tradition against borrowing was set aside when grave emergencies, such as wars, forced the issue.¹

It was, however, held that the government ought to establish sinking funds and reduce governmental debt incident to war as much as feasible. While the United States, owing to its rapid expansion, found it possible to approximate this maxim following the War of 1812, the Civil War, and again the first World War, older countries with larger debts and with smaller possibilities of extensive expansion found it much more difficult, and indeed on the whole impossible, to retire debt in any important degree. With respect to England, while there was little actual retirement of debt in the hundred years between the Napoleonic Wars and the first World War,

¹ Even taxes in early modern English history were tolerated only as extraordinary levies to meet necessary emergency situations, notably war. Emergence from the feudal period into the modern period gradually brought a shift from feudal dues, and income from the king's private domain, to regularly assessed taxes on property, transactions, and income.

the debt at any rate did not rise. France, on the other hand, experienced a continually rising *trend* in her public debt throughout the nineteenth century.

Charts 8 and 9 show the historical trends in the public debt in England from 1690 to 1938 and in France from 1815 to 1938. Some interesting facts emerge from these charts. The period from 1690 to 1815 in England is divided almost equally into years of war and years of peace. Regularly in the war years the public debt rose, while in years of peace the budget was more or less balanced, and at times some reduction in the debt occurred. It is evident, however, that there is a marked upward trend throughout the entire period which assumes almost a straight line on a logarithmic scale. Thus, overlooking the relatively short-run fluctuations about the trend, it may be said that the British public debt for this period of one hundred and twenty-five years was rising at approximately a constant percentage rate of increase. Between 1815 and 1914 the public debt ceased to rise and, considering the whole period, declined by a very moderate amount, so that by 1914 it stood 21.8 per cent under the 1815 level. There were some fluctuations up and down, notably the temporary rise in the debt during the Boer War, followed by a subsequent fairly rapid retirement. Then came the prodigious rise in the public debt incident to the first World War, so that the postwar debt stood in relation to the total national income at about the same level as in 1815. In both 1818 and 1923 the debt was twice the national income.²

At the close of the Napolconic Wars the French public debt, in contrast with the situation in England, was small.³ Her experience from 1815 to 1914 was quite divergent from that of England. Whereas the English debt became stabilized and indeed gradually declined, the French debt rose with temporary interruptions through the nineteenth century up to

² See Report of the Committee on National Debt and Taxation, *Cmd. 2800*, 1927, p. 235.

³ Napolcon, while confronted with grave financial difficulties, nevertheless resolutely opposed loan financing.

Millions of
pounds

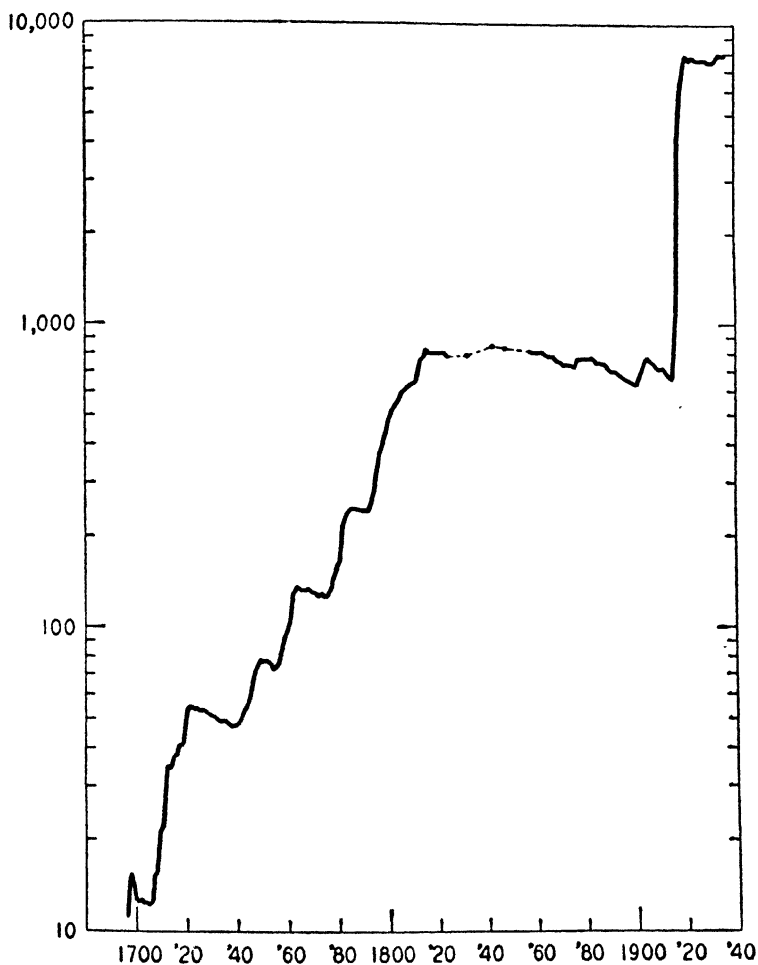


Chart 3.

The Public Debt of Great Britain

Sources: Figures for the years 1696-1825 from Elizabeth B. Schumpeter, "English Prices and Public Finance, 1660-1822," *Review of Economic Statistics*, February, 1938. Figures for the years 1833, 1842, 1847, and 1854 from H. E. Fisk, *English Public Finance from the Revolution of 1688*, Bankers' Trust, New York, 1920. Figures for the years 1856-1937 from *The Statesman's Yearbook*, Macmillan, annually.

the time of the first World War. There were, of course, periods of varying length in which the budget was balanced and in which some retirement of the public debt occurred, but the trend throughout the century was upward. The steepness of the rising trend varied considerably at different points in the century. With the first World War came—as also in England, but at a far more rapid rate—an unprecedented rise in the debt of a magnitude so great as to result in (or to accompany—the causal interrelationship is a complex one) a five- or sixfold price inflation.

The first compelling reason for borrowing was thus the exceptional emergency of war. But, increasingly, local governmental bodies found it necessary to make discontinuous capital expenditures on needed public improvements. These expenditures were often so large in any current year that it was quite impossible to finance the project from current taxation. Thus, a municipality might have decided to build a public school or to install a municipal water works system or a sewerage disposal plant so costly as to preclude the expense being borne by current taxes. The lumpiness of certain large capital investments made borrowing well-nigh imperative.

The objects of borrowing to which we have referred involve considerations with respect to apparently unavoidable expenditures, such as those for war or for socially necessary public improvements demanded by the community in order to maintain and improve modern standards of living. More recently, however, the sphere of public finance has been enormously broadened, owing to the political necessity imposed upon modern communities to pursue an active policy with respect to the fundamental problem of unemployment. This is true whether viewed from the standpoint of unemployment incident to the fluctuations which we associate with the business cycle, or from the standpoint of unemployment of a structural character having to do with maladjustments in the world economy or the economy of individual nations, including the problem of chronic unemployment.

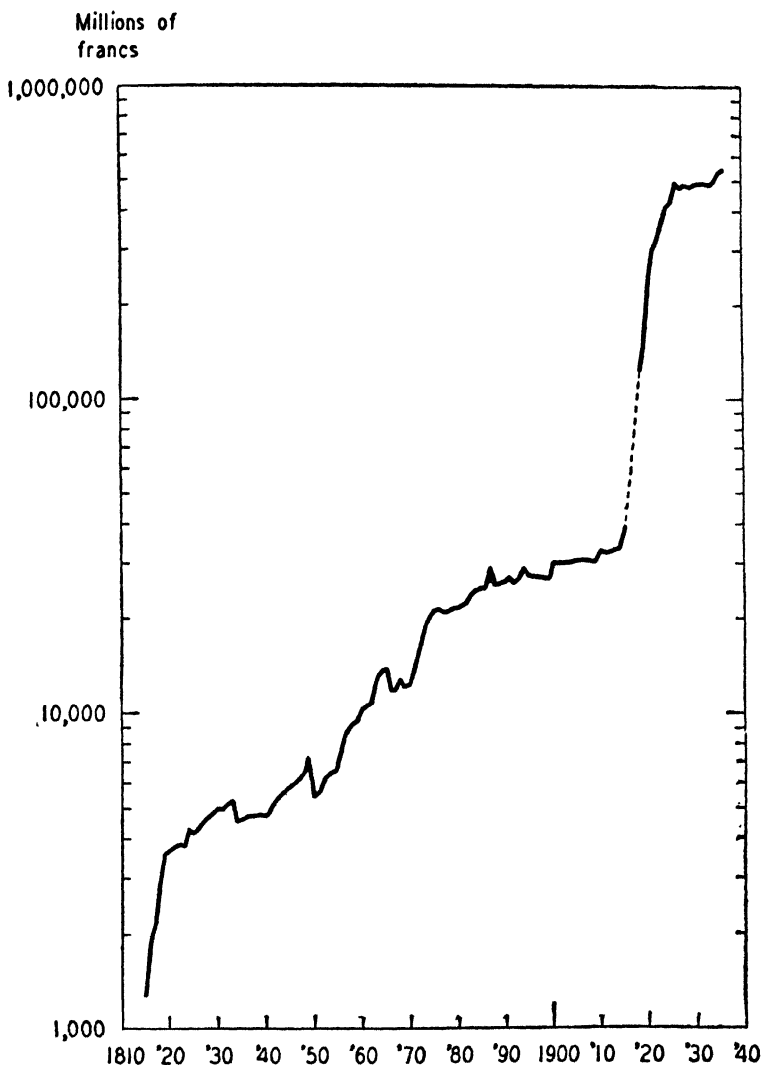


Chart 9.

The Public Debt of France

Sources: Figures for the years 1815-1932 computed from those given in *Statistique générale de la France—Annuaire statistique, 1933, pp. 204-06. Figures for the years 1932-36 from The Statesman's Yearbook, Macmillan, annually.*

II. Public Debt versus Private Debt

In an illuminating article in the *Weltwirtschaftliches Archiv* for May, 1937, Professor Jørgen Pedersen of the University of Aarhus, Denmark, argues that many of the principles which one finds in the literature on Public Finance are based on reasoning derived from private finance. He concludes that the discussion of the problems of public finance will continue to be confused as long as it is not clearly recognized that this analogy is false and erroneous.⁴

With respect to consumption, the public and private economies have indeed much in common. Both must distribute a given income among different expenditure items in such a manner as to get the greatest possible benefits. For the public economy, no less than for the individual, it is important that waste be eliminated as far as it is humanly possible to do so.

With respect to production, employment, and income, however, the analogy between the public and private economies leads to quite erroneous conclusions. Both, indeed, strive to maximize their income. But this end can frequently not be achieved by the public economy if it applies the financial principles appropriate for the private economy. For the individual it is important that his expenditures be kept below, or at least within the limits of, his income. For the state an increase of expenditures may frequently increase the total national income and improve the fiscal position of the state. The individual is concerned exclusively with the effect of his action upon his own business. The effect of his own economic activity upon other individuals is significant for him only in so far as this, in turn, affects his balance sheet. The balance sheet tells him all that he needs to know in order to judge the appropriateness of different lines of business policy.

⁴ Pedersen disclaims any originality in this conclusion. "Other economists have come to the same result, but unfortunately most have forgotten to draw the relative concrete conclusions from their analysis. We are all so accustomed to the view of private business that it is difficult for us to liberate ourselves therefrom, even when we realize full well that in the case in hand another viewpoint is required." *Weltwirtschaftliches Archiv*, May, 1937, p. 469.

✓ In the case of public finance, however, it is quite otherwise. The success or failure of public policy cannot be read from the balance sheet of the public household. It cannot be determined by whether or not debt is being retired or assets accumulated. The success or failure of public policy can be determined only by noting the effect of expenditures, taxes, and loans on the total national income and on how that national income is distributed.

✓ The fiscal policies of the state cannot be conceived in terms of the calculations of private enterprise but in terms of regulation and control, in terms of the impact of public policies upon the functioning of the economy as a whole.

We may therefore conclude [says Pedersen] that the financial transactions of the state, that is, the spending of money for certain purposes, the collection of taxes, the issuance of loans, and the creation of means of payment, the fixing of rates and prices for state-controlled goods and services, are not economic decisions arrived at with a view to the balance sheet of the business of the state as such. We conclude that such a balance sheet tells us nothing about the appropriateness or economic soundness of the measures taken. Such measures must rather be undertaken with a view to achieving an economic balance for the economy as a whole. Their appropriateness or soundness can be determined only in terms of their effect upon the welfare of the community as a whole. Politicians and statesmen are obsessed by the ideology of private business, and their good conscience therefore requires that their financial transactions correspond as far as possible to the requirements and practices of private business management. Through the force of circumstances they are often compelled to deviate seriously from this ideal, but such deviations are glossed over as much as possible. This ideological prejudice causes great damage, because it prevents statesmen from acting with conscious knowledge of the real aims of public policy and on the basis of the requirements of the relevant economic considerations.⁵

✓ The familiar popular analogy between private debt and public debt internally held is especially misleading.

⁵ *Ibid.*, p. 472.

Borrowing, as the term is commonly used, has two characteristics without which one could not speak of a loan: (1) there must be a transfer of the disposal over funds from one economic unit to another; (2) the burden of the borrower is distributed over a period of time during which repayment of the loan takes place. . . . When, however, the state borrows from its subjects, neither of the two characteristics is present. The state does not obtain the power of disposal over additional funds, for these funds were already within the realm of its power, and might, in fact, have been obtained through taxation.⁶

Thus an internal loan raised by the state is not really a loan in the ordinary sense, since it possesses none of the essential characteristics of such a transaction. There is no transfer of funds from one economic unit to another, and no burden is shifted to future generations. An internal loan resembles ordinary borrowing only in a purely formal way, and it is obvious that every analogy to private borrowing must be completely false. Yet the raising of a loan by the state is not a mere accounting phenomenon, such as would be the transfer of sums of money from one account to another within a given enterprise; on the contrary the process has far-reaching consequences upon production and distribution. Its actual significance arises from the fact that, like all other financial transactions of the state, it is a means of influencing production and the distribution of income, and it should be considered only as such.⁷

The statements just made on the nature of public debts are no new discoveries. It has been recognized by most economists that internal debts must not be considered as debts in the ordinary meaning of the term, and that they do not represent the shifting of the burden to future generations. In view of this fact it is surprising that economists, who after all may be considered experts in economic matters, regularly seem to fall back into popular views whenever they are called upon to advise their governments. Perhaps the most striking example is the Report of the British Committee on National Expenditure, the May Committee.⁸ The majority of that Committee established the general principle that "existing financial difficulties make it necessary for the nation like

⁶ *Ibid.*, pp. 472-73.

⁷ *Ibid.*, pp. 473-74.

⁸ Report of Committee on National Expenditure (May Committee), *Cmd.* 3920. London, 1931.

the private individual to consider seriously what it can afford and not merely what is desirable. Viewed from this standpoint much expenditure is unwarrantable at the present time, which, under more favorable circumstances, we should deem justifiable and even a wise investment of the national resources." This was written at the lowest point of the last depression when unemployment was the only alternative to additional governmental expenditures. The implied analogy with a private individual, who has to take account of income and outgo if he is not to go bankrupt and whose financial status can be read from his balance sheet, and at the same time the falsity of this analogy are so clear that no further comment is required.⁹

Another recent work which may be quoted in this connection is a book edited by Hugh Dalton entitled *Unbalanced Budgets*,¹⁰ which offers a review of the financial problems in a number of countries. In almost all the contributions the idea prevails that the incapacity of most states to balance their budgets is a deplorable disadvantage, that the repayment of public debts as such is a virtue. Even in Myrdal's Report of 1934¹¹ there are traces of this layman's opinion. No author has more strongly insisted upon the untenability of the current analogy between public and private financial transactions than Myrdal himself. Nevertheless, he seems in his book to attach some importance to the nature of the state's capital and develops the idea that it is actually important, even apart from psychological effects, that the state's capital must be kept constant, or must even be increased in the long run. His arguments seem to imply that an increase in internal debt must burden the future budgets so much that no money would be available in the future for the normal and even probably increased social requirements; this is a view which cannot be maintained on the basis either of his own theoretical considerations or of experience. (Consider, for example, the enormous increase of internal debt in Britain during the war and the share of her social expenditures in comparison with those of Sweden which has not increased her debt in the same proportion.) This argument was at the basis of Dalton's proposal for a capital levy designed to extinguish a large part of the public debt; this proposal was prompted by the fear

⁹ *Weltwirtschaftliches Archiv*, May, 1937, p. 474.

¹⁰ Published by George Routledge and Sons, London, 1934.

¹¹ G. Myrdal, *Finanzpolitikens ekonomiska verkningar*, Stockholm, 1934.

that the sums necessary for the service of the debt would burden the budget so much that the natural increase of other expenditures would have to be curtailed.) This argument overlooks the fact that the sums spent for interest or repayment become income for the creditors, so that total income remains unaffected.¹²

While the above statement places the emphasis in the right place, it is nevertheless, unless properly qualified, an oversimplification. The tax structure, through which the transfer of interest payments to bondholders is implemented, may unfavorably affect the flow of consumption and investment. This fact is, however, implicitly recognized by Pedersen, for he keeps in mind the effect of fiscal policy as a whole—expenditures, loans, and taxes—upon the formation of income and upon the distribution of income.

Whether a public debt should be reduced or not depends exclusively upon the general economic situation and not upon judgments derived from private accounting considerations.

Whereas a single individual always improves his position by increasing his assets, the situation of a state does not necessarily improve by a corresponding procedure. It is quite conceivable that the reduction of public debt not only reduces the national income, but also that the fiscal position of the state may be deteriorated more by the repayment of debt than by the incurrence of further debt. . . . Whether retirement of debt should take place or not depends exclusively upon the expected effect upon production and income distribution and upon political circumstances which are connected with the political ends at the moment, and these will naturally vary from case to case.¹³

III. Public Expenditures and Productivity

Ursula Hicks¹⁴ distinguishes three types of public debt: (a) dead-weight debt, (b) passive debt, and (c) active debt. Dead-weight debt is one which is incurred in consequence of

¹² *Ibid.*, pp. 475-76.

¹³ *Ibid.*, p. 478

¹⁴ U. K. Hicks, *The Finance of British Government, 1920-1936*, Oxford University Press, 1938.

expenditures which in no way increase the productive power of the community, yielding neither a money revenue nor a future flow of utilities. The most conspicuous type of public debt thus incurred is, of course, that arising from war expenditures. Passive public debt is one incurred from expenditures which, while yielding utilities and enjoyments to the community, such as public buildings, public parks, and the like, neither return a money income themselves nor increase the efficiency and productivity of labor and capital. An active public debt is one incurred in consequence of (a) capital expenditures on projects which are self-liquidating, and (b) expenditures of a character which, directly or indirectly, increase the productive power of the community, such as expenditures on public health or education designed to raise the efficiency of the people, or expenditures on the conservation and improvement of the natural resources designed to increase the productivity of the nation as a whole.

The public debt in England is the leading example of the first category—the dead-weight debt. The same is, in large measure, also true of the French public debt and of the federal debt in the United States. Since 1930, the United States notably has incurred a large public debt, a considerable part of which must be placed in the dead-weight category, springing not from war expenditures but from the necessity of offering relief to the unemployed. In Germany the rise in the public debt since 1933 had indeed the effect, as in the United States, of relieving unemployment, but it was made incidental to a huge military program. Thus, the United States is the only great country which clearly shows a large addition to the dead-weight debt growing out of relief expenditures.

Historically, public debts in most countries have been mainly of the dead-weight type. Sweden is a notable exception to this rule. Her public debt is today far more than covered by productive assets. Indeed, in Sweden in recent years the net income from state enterprises was approximately twice as large as the interest on the public debt. The public debt of state and local bodies in the United States falls, in

the main, in the passive public debt category. According to Edna Trull,¹⁵ approximately 15 per cent of the total state debt in this country is of the self-liquidating, active type, while the remaining amount represents a passive type of public debt. It is always difficult to distinguish, however, between expenditures which merely yield consumption utilities and expenditures which indirectly increase the productive power of the community. Public playgrounds and recreational facilities give pleasure and enjoyment, but may also raise the morale of a people and make the nation vigorous and efficient. The distinction between active and passive debt has value for certain purposes, but it can also lead to the same confusion which is so often encountered in the history of economic thought with respect to so-called productive and unproductive labor.

Frequently one hears the comment that the payrolls of private industry are the source of the whole national income, that government is supported by business, that private enterprise alone is productive.

The early classical economists, led by Adam Smith, introduced a novel idea into economics—a new concept of productivity. The Physiocrats had held the view that agriculture alone was productive. Agriculture supplied the necessities of life for the agricultural population, and if there was a surplus left over, it was possible out of this “produit net” to support the “unproductive” town population.

It is not difficult to see how the Physiocratic concept of productivity was born out of the conditions emerging from the Middle Ages. Towns originally were simply the winter residences of great feudal lords. The town population grew up around the court. It performed personal services, prepared food, made rich clothing and ornaments, jewels, laces, velvets, tapestries, clocks, and furniture. All this activity was supported and sustained from the surplus which the lord was

¹⁵ Edna Trull, *Resources and Debts of the Forty-eight States*, Dun and Bradstreet, 1937, p. 47.

able to draw from his domain. Without this surplus, life in the town would quickly ebb away. The town had no independent source of subsistence. It drew its sustenance from the country.

Town life was a luxury which could only be supported out of a richly productive countryside. Town life could develop only so far as an agricultural surplus could be produced and, through feudal rights and privileges, drawn off from the land to enrich the town life of the landed aristocracy. If king and country were to become rich and powerful, it was necessary to encourage agriculture. Agriculture alone was really productive. All other pursuits were sterile and unproductive.

As an explanation of the emergence of town life and the diversity of occupations, this line of reasoning was not without merit. But as an analysis of the functioning of a society advanced beyond the primitive stage of an exclusively rural community, it was hopelessly deficient. And as a basis for public policy, it led to ridiculous absurdities.

The thesis that agriculture was the fountainhead of all wealth, that agricultural pursuits alone were "productive," was once and for all disposed of in Adam Smith's great book *The Wealth of Nations*. The view he challenged had seemed so self-evident and plausible that none had seriously questioned it. Yet increasingly as manufacture and trade developed, it was inevitable that sooner or later it would become apparent to an original mind that this thesis simply did not fit the facts of a more highly developed society. Yet it held sway not only in the popular mind, but was rationalized into a complicated method of thinking by the Physiocrats.

The opening paragraph in *The Wealth of Nations* strikes directly at the foundations of the "produit net" philosophy. Smith regarded labor as the basic source of wealth. Through division of labor and exchange, productivity is increased. If one *exchanges* one's agricultural surplus against the products of specialized and efficient town craftsmen, one increases his own product. The surplus sent to the town is sold *in exchange*

for products made more efficiently in the towns. The country does not *support* the town. Exchange with the town enriches the country.

Now, in point of fact, this analysis did not represent *merely* a new interpretation of the *same* facts. To some extent, the *facts* had changed. At the earliest emergence of town life the town, as we have noted, was simply a collection of families catering to the wants of the lord and his court. It had no independent existence. The activities of the town represented the lord's method of consuming his agricultural surplus.

But, gradually, some of the mechanics of the town acquired an independent status of their own. They offered their own wares in exchange. Country barons and squires *exchanged* their agricultural surpluses for the products of the towns' craftsmen. Thus, a real exchange developed between country and town. Both produced goods that satisfied wants, and both parties enhanced their productivity through the process of exchange.

The breakdown of feudal privileges in the French Revolution developed and expanded this exchange process. The peasant, having acquired a new status in relation to the land, was in a stronger position to retain control over his surplus product—the product in excess of his own consumption needs. This surplus he could exchange for manufactures made in the towns. By the time the development of social institutions had reached this point, it was possible to recognize that the country no longer supported the town any more than the town supported the country. Each enhanced the productivity of the other through the division of labor and the exchange of products. It no longer had any meaning to say that agriculture was productive while manufacture was not, or even that agriculture was more productive than manufacture. Both activities satisfied human wants. If all of the nation's productive effort had gone into agriculture, the real income would have been very much lower.

But while Adam Smith freed the thinking of his time from the Physiocrats' narrow concept of productivity, he failed

to liberate himself and his generation wholly from the basic Physiocratic error. While urging that manufacturing was equally as productive as agriculture, he nevertheless held that only those workers engaged in making material goods were really productive. Thus, he argued that not only menial servants, but also "churchmen, lawyers, physicians, men of letters of all kinds, players, buffoons, musicians, opera singers, opera dancers, etc." were unproductive laborers. It is remarkable that, once he had taken the first step in the right direction, he should have made this error. If manufacture is productive, since it no less than agriculture satisfies human wants, surely the opera singer, the servant, the teacher are equally productive. Producers of personal services also play a role in the system of division of labor and in the exchange economy. At a later stage in economic thinking the logic of Adam Smith's own position, which he imperfectly applied, was pointed out and universally accepted by all economists.

But the logic of this thesis is frequently challenged with respect to governmental expenditures. Public investment (parks, roads, playgrounds, hospitals), it is asserted, is in some sense unproductive, while private capital expenditures are productive in character. Governmental payroll expenditures in order to carry out the activities of government are regarded as less productive, or even as nonproductive, compared with private payroll expenditures.

In discussing the productiveness of private business expenditures, it is important to make a sharp distinction between (a) the creation of a flow of real income of goods or services, and (b) the creation of new instruments of production which increases the efficiency of labor and results in a larger flow of real income than would otherwise be possible. The former is a utility-creating expenditure; the latter is an efficiency-creating expenditure. Investment which duplicates existing plants in accordance with the requirements of growth (as, for example, the erection of another radio factory) is of the former type. Investment in improved machinery is of the latter type.

The view that public investment is "unproductive," while private investment is productive, will not withstand careful analysis. Public investment, just as with private investment, may be merely utility-creating or it may also be efficiency-creating. The development of a public park, swimming pool, playground, or concert hall makes possible a flow of real income no less than the erection of a radio factory. Public investment in the national forest, by preventing soil erosion and floods, or the construction of school buildings, may contribute to raise the efficiency of labor no less than private investment in improved machinery. Public investment, like private investment, if wisely made will be utility-creating or both utility-creating and efficiency-creating.

In addition to being (a) utility-creating and (b) efficiency-creating, public expenditures may also be (c) income-creating in the sense that they tend currently to expand income and employment. Indeed, from this latter standpoint, expenditures which are not efficiency- or utility-creating (such as war expenditures) may be quite effective. Thus, wars not only promote employment during the emergency, but may stimulate postwar private investment by creating accumulated shortages in housing and in other investment areas.

It is sometimes said that there is an important difference between business expenditures and governmental expenditures, in that the former are self-sustaining while the latter are not. But this is not true. No private business can sustain its sales volume, unless the outlays of other businesses and the government continue to feed the income stream. Nor is private business as a whole self-sustaining. It was not self-sustaining when the national income fell from \$80 billions to \$40 billions in the early thirties, nor indeed in any other period of depression. The sales receipts of private business, no less than the tax receipts of government, depend upon the maintenance of a high national income. And the outlays of government can and do contribute to a sustained national income, no less than the outlays of private business. Indeed, when private business outlays decline, the government alone is in a position to go for-

ward and sustain the income through increased expenditures.

When it is said that public expenditures are "sustained out of" private income, it will be disclosed, on careful analysis, that the reasoning is precisely similar to that of the Physio-crats. Manufactures were sustained, it was said, out of the surplus product of agriculture. The real fact, however, was that, instead of applying *all* the productive resources of society to agricultural production, the real income of the community was raised enormously by diverting ¹⁶ a part of the productive resources to manufactures. In like manner, under modern conditions, many wants can be satisfied at all only by governmental action, and in other cases more effectively by governmental action. Roads, streets, sewerage disposal, reforestation, flood control, parks, schools, public health, hospitals, low-cost housing, social insurance, public playgrounds, and other recreational facilities—all these represent ways of enlarging our real income far beyond what it could be if these things were not undertaken by government. These activities are utility-creating, and in part efficiency-creating, no less than the activities of private enterprise. The governmental expenditures are not "supported out of" private enterprise any more than manufacture is supported out of the agricultural surplus. Just as the manufacturing population buys the surplus of agriculture in exchange for its products, so also the services of government enter into the exchange process and enrich the income stream. It is true that part of the exchange payment is in the form of taxes, but this fact in no way alters the fundamental fact of exchange. The income of the population attached to any private enterprise is derived not merely from the sale of its product to other private industries, but also from the sale of its product to the population attached to governmental projects, including the construction of public works. In this process of exchange it is not true that any one segment of the exchange economy supports out of its surplus

¹⁶ This is all the more true when it is a question not of *diversion* but of *employment* of idle labor and unused productive resources, as is the case in periods of depression or of chronic unemployment.

any other segment. Manufacturing is not maintained out of the surplus of agriculture, and government is not maintained out of the surplus of private enterprise. Each segment contributes to the total flow of real income, and each takes its share out of the income stream.

In the sense that the most essential necessity of life—food—is produced by agriculture, it may be said that agriculture is basic to all other economic activity. This seems to give it a sort of priority. But this priority has a meaning only in primitive societies where it is necessary to devote all, or nearly all, of productive resources to the procurement of food. As a society becomes more productive, agriculture loses its right of priority. The very superabundance of agricultural products implies that more emphasis must be placed upon other economic pursuits. Manufacture, indeed, may now become the really important branch in that its products are relatively scarce in relation to the products of agriculture. In an agricultural surplus society, manufactures may assert a claim to priority.

With increasing productivity, material wants are becoming more and more abundantly satisfied. It now becomes possible to satisfy more fully artistic and intellectual wants. Leisure itself becomes an economic good, more important than any further addition to food or clothing. And with leisure comes demand for recreational, artistic, and intellectual activities. And it is in this area that community and governmental activities play an increasingly important role.

IV. Economic Effects of Public Debt

The character of the expenditure for which debt is incurred will determine whether the effect is (a) employment-creating, (b) utility-creating, or (c) efficiency-creating, or some combination of these. The character of the expenditure will affect the standard of living. But once the debt has been incurred, its subsequent impact upon employment and the dis-

tribution of income will be the same regardless of the purpose for which the debt was incurred. The magnitude of subsequent real income will, indeed, vary according to the character of the expenditures made, but the functioning of the economy after the event will depend exclusively upon the magnitude of the debt and upon the type of tax structure designed to finance the interest payments.

✓It is of interest to inquire whether or not the enormous dead-weight debt in England, following the Napoleonic Wars, on balance impaired the great expansion of British industry in the nineteenth century. It must be remembered that this dead-weight debt was internally held and that, therefore, the high taxes required to service the interest on the debt flowed back directly again into the community. ✕An examination of the tax structure prevailing in the early half of the nineteenth century would indicate that, in all probability, the huge dead-weight debt served to add to the flow of individual savings. This is true for the reason that the taxes were heavily of the indirect type, which did not weigh severely on the incomes of the rich, while on the other hand the rich, for the most part, held the government bonds. Thus, funds were taken through taxes from the community as a whole and paid in the form of interest to the wealthy holders of bonds, whose incomes flowed largely into the stream of savings. According to the Colwyn Committee, "taxation in 1818 hardly touched the saving power of the wealthy. . . ." The Committee reports that, of a total tax revenue of £56 millions, £40 millions was raised by customs and excise duties, levied largely on necessities, the income tax having been repealed as from April, 1815.¹⁷

In a century which witnessed a rapid extensive expansion, revolutionary changes in technology, the emergence of new industries, the rapid development of new territory, and an unprecedented growth in population, an important limiting factor to expansion was the flow of savings. ✕The dead-weight debt probably served to siphon a part of the stream of income

¹⁷ Committee on National Debt and Taxation, *op. cit.*, p. 236.

from consumption into savings, and in this respect facilitated and encouraged the rapid expansionist development of the nineteenth century.

There were, indeed, periods of greater or less duration in which this compulsory saving process clearly tended to create depressed conditions. Chapter 7 of Malthus' *Principles of Political Economy* is a classic example of an illuminating analysis which interprets the post-Napoleonic War depression in these terms. But, viewing the period from a long-run standpoint, the investment outlets were over the century ample, and the scarcity of investment funds was, on the whole, a limiting factor.

In the Victorian era it is generally true that saving was left as a monopoly in the hands of the wealthier classes, who were allowed to remain in almost complete control of their riches. In our view it is impossible to justify the old distribution of taxation, even though it reduced interference with saving to a minimum. It is true that under it industry advanced enormously, and the standard of living improved for the whole community more than in any comparable period. Nevertheless, a tax system falling less on the purchasing power of the poorer classes and more on the savings of the richer might have been beneficial to production, as it certainly would have been to immediate consumption.¹⁸

There are other directions in which the dead-weight public debt in the early nineteenth century acted as a stabilizing force. The fact that rapidly growing financial institutions—the stock market, commercial banks, savings banks, and finally life insurance companies—had available an asset which was virtually riskless could scarcely fail to have had great significance for the secure development of these institutions. Moreover, in the early period of capitalism, when enormous risks necessarily had to be taken in industrial ventures as yet untried and of a highly experimental nature, government bonds constituted a safety reserve which made it possible for capitalists to achieve a reasonable balance between investment

¹⁸ Committee on National Debt and Taxation, *op. cit.*, p. 241.

assets and speculative assets. The "fact that a man holds a good block of War Loan and can rely on a nucleus of safe income may sometimes induce him to seek higher but less safe return on his other savings." ¹⁹ Had it not been possible to hold a large part of the assets in safe and secure government bonds, and to use these assets as a vantage point from which to make expeditionary excursions, so to speak, into untried and speculative investment territory, it can scarcely be doubted that the rate of bankruptcy in a highly dynamic and rapidly changing industrial system would have been greater than was the case. This holds true for the individual investing capitalist and for the rising industrial and trading firms and corporations. Indeed, it is difficult to see that the financial and industrial development of England in the nineteenth century could have proceeded with the degree of steadiness and security actually achieved had there been no large public debt available for secure investment.

The main disadvantage of the public debt in England in the nineteenth century was the weight which the taxation incident thereto imposed upon the wage-earning classes. From the short-run standpoint it depressed real wages. But in a highly dynamic society the curtailment of consumption rapidly brought about an expansion in the capitalistic process of production and thereby facilitated the progressive rise throughout the nineteenth century of the standard of living. It may be that the sacrifice of the present was too severe to be justified even by the rate of growth which it encouraged. It may well be that England in the nineteenth century, no less than Russia in the twentieth, but by different institutional processes, sacrificed present consumption too much in the interest of capital accumulation and a future rise in the standard of living.

Question may now be raised whether, in the altered conditions that currently confront Britain, an internal public debt today has any of the advantages or the degree of advantage which has been suggested above. In the England of the nine-

¹⁹ Committee on National Debt and Taxation, *op. cit.*, p. 100.

teenth century a case can, we think, be made out for the thesis that a large public debt, substantially maintained but not allowed to rise, was, on balance, an advantage for expanding industrialism. It is probably true that, because of the economy imposed by a century of balanced budgets and even some retirement of debt, utility-creating public improvements, education and public health, were unduly neglected. Whether larger expenditures on such projects could have been financed adequately out of taxation without weighing unduly either upon the current necessities of life of the masses or upon the desirable volume of capital formation may be debatable. From the Napoleonic Wars to 1845, and again from the early seventies to 1895, a considerable portion of the country's productive resources was not fully employed. In the periods of prolonged depressions public expenditures of the character indicated could have been financed by borrowing (with some attendant monetary expansion) without, on the one side, encroaching upon capital formation or, on the other side, resulting in undue price inflation.

The assumption that a large public debt is inherently and necessarily under all circumstances an evil is not warranted. There are good grounds for believing that the post-Napoleonic debt exercised no depressing effect on the British economy and may, indeed, have played an important role in the economic progress of that country in the nineteenth century. Equally, we should not be justified if we concluded, without examination into the special circumstances of present-day economic tendencies, that the high public debt in England in the post-World War I period either depressed the standard of living, or prevented an otherwise attainable increase in productivity, or intensified the volume of unemployment. Indeed, it is not impossible that it may have acted in quite the opposite direction. While the post-Napoleonic era called for a large flow of savings, there are grounds for believing that the decade of the twenties called for a larger volume of consumption expenditures relative to income. And while the public debt, considering the manner in which it was held in conjunction

with the then prevailing tax structure, encouraged saving in the post-Napoleonic era, in postwar England it may have acted to stimulate consumption, owing to the differences in the manner in which the debt was held and in the tax structure. Whereas the debt was formerly an instrument through which funds were siphoned from consumption into savings, so recently it has become, in part at least, an instrument to siphon funds from savings into consumption. This follows from the fact that the government debt has recently been held partly by savings and financial institutions, the beneficiaries of which constitute a large part of the British public, while on the other side the tax structure is sufficiently progressive as to weigh relatively heavily on savings and relatively lightly on consumption.²⁰ We suggest that quite possibly the public debt for different reasons and under different economic circumstances, then and now, has served a useful purpose.

There is no reason to suppose that it is not important now, as in the nineteenth century, for financial and business institutions to have available secure and safe investments, such as those offered by government bonds. Currently, the supply of government bonds relative to other securities is certainly very much higher than was true in the *latter* part of the nineteenth century, though clearly it is not as high as in the *early* part of the nineteenth century. From the standpoint of the quantity available, no case can be made for the thesis that the quantity is inadequate for the needs of a well-balanced investment portfolio of financial institutions and of business corporations. It is clear that gilt-edged private securities are now available in much larger quantity than formerly and that, correspondingly, there is less need for government obligations. Indeed, it may be argued that the current large volume of governmental securities is tending to displace and crowd out gilt-edged private securities which might otherwise have come into existence.

²⁰ "In regard to the *standard of saving*, we conclude that the increased direct taxes have contributed appreciably to a *pro rata* decline in saving—not startling, but very substantial—below the pre-war amount," Committee on National Debt and Taxation, *op. cit.*, p. 241.

Here we encounter the difficult question with respect to the advantages and disadvantages of a large volume of private, fixed-debt obligations. Private debt obligations may, indeed, be desirable enough from the standpoint of the investing institution, but from the standpoint of the issuing institution a large volume of such obligations, creating as it does a high burden of fixed charges, imposes a dangerous rigidity in an unstable economic world. Such rigidity is likely, in turn, to reinforce and augment the tendency toward economic instability, and has in certain instances, notably in the case of the American railroads, resulted in a serious impasse which almost precludes the possibility of making necessary new investments.

It is evident that we are developing more and more institutionalized sources of savings. These naturally seek fixed debt obligations, whether gilt-edged private securities or government bonds. Thus, from the standpoint of those who offer funds in the financial and investment market, there is clearly an incentive on the part of industrial enterprise to issue debt obligations which are preferred to equities by the investor. As the recent Twentieth Century Fund studies ²¹ have pointed out, however, this is a dangerous development, and legal regulations controlling financial investment institutions, notably savings banks and life insurance companies, ought probably to be liberalized so as to permit them to hold a certain proportion of their assets in the form of equities. Any considerable development in this direction, however, presupposes the combination of such equity holdings with an adequate volume of highly riskless assets, either in gilt-edged private securities or in government bonds. From the standpoint of the flexibility of the economy as a whole, it is desirable that the industrial borrower should issue stocks rather than bonds. If, however, the financial investing institutions are to be encouraged to hold equities so as to diminish the current ratio of private debt to private wealth, it is necessary that there shall be available an adequate volume of government secur-

²¹ *Debts and Recovery, 1929-1937*, The Twentieth Century Fund, 1938.

ities in order to provide the appropriate balance for the portfolios of financial investing institutions.

We now encounter the question whether a public debt imposes any such serious rigidity upon the economy as is the case with private debt. We believe that it does not. The interest on the public debt is serviced by taxation, the successful collection of which depends upon the maintenance or increase from the long-run standpoint of the national income as a whole. The solvency of the government is not subject to the risk of structural changes which may cause the decline, or even death, of certain industries and thus profoundly affect the income of private corporations. Moreover, the cyclical fluctuations of income are less serious for the government than for the private sector of the economy. In the first place, the incomes of many private corporations fluctuate far more violently than the income of the economy as a whole. Much more important, however, is the fact that the individual corporation with a low income in the depression phase of the cycle is placed in a dangerous financial situation. Corporations with a heavy load of debt may, in seriously depressed conditions, be forced into bankruptcy and may be unable to carry the interest burden, or at any rate unable to raise necessary new funds for expansion in the subsequent revival period. The government is placed in no such dangerous situation by reason of cyclical fluctuations of income. Indeed, the government is not only able to, but may, to the advantage of the economy as a whole, engage in borrowing when the national income is temporarily low.²² As long as the interest on the public debt is well within the practical taxable capacity of the government, taking the entire business cycle into consideration—and taxable capacity has very flexible limits, varying, however, with the financial integrity of the country—no question can arise with respect to the solvency of the government. And in advanced countries, in which

²² The power of the government, through the open-market operations of the Central Bank, to increase the funds available for the purchase of government bonds is an important consideration.

there is a widespread interest on the part of the general public in the security of financial investments, such as savings and life insurance policies, the willingness to undertake taxation as an alternative to inflation is very strong. Such a community, on the one side, has an enormous capacity to submit to taxation and, on the other side, can be expected to resist the road of inflation so luring to more primitive economies in which the mass of the people had no stake whatever in the stability of the value of money.

Thus, a dual financial system, which on the one side affords a large supply of governmental debt obligations for secure financial investment, and on the other side encourages the issue of equity securities by private companies, may well be the desirable goal. Financial institutions with a large supply of government obligations may safely invest a very considerable portion of their assets in common stocks. A rise in the public debt is thus not necessarily inconsistent with the requirement that private industry should more and more turn to equity financing and eschew the tendency so prominent in the decade of the twenties toward mortgage and bond financing. As far as the late twenties are concerned, it is, of course, true that the extremely inflated stock market encouraged many large corporations to retire their bonds by the issue of common stocks.

In this connection it will be of interest to compare (a) the total amount of government debt obligations, federal, state, and local, (b) the total estimated volume of private debt²³ in the form of bonds and mortgages, and (c) the value of

²³ It is particularly noteworthy that, disregarding short-run fluctuations, private debt has remained substantially equal to the national income during the last 40 years, as shown in the following table. (See National Industrial Conference Board, *Economic Almanac*, and *Private Long-term Debt and Interest in the United States*.)

Year	Nat'l Income *	Private Debt
1902	\$18.4	\$17.0
1913	31.5	32.2
1929	82.9	84.2
1937	71.2	70.3

* In billions.

common stock measured by the current market prices listed on the New York Stock Exchange. These data are given in the following table:

TABLE XIX

Gross Government Debt,²⁴ Total Private Debt in Bonds and Mortgages,²⁵ Value of Common Stock²⁶

(in millions of dollars)

Gross Government Debt, 1937		
Federal	\$36,715	
State and Local	19,152	
Total		\$55,867
Private Debt, 1937		
Railway	13,109	
Industrial	7,762	
Public Utility	13,874	
Farm Mortgage	7,082	
Urban Mortgage	25,508	
Total		\$70,335
Value of Common Stocks, 1935-37		\$42,131

V. Public Debt Controversy in the United States

With respect to the role of public debt in the American economy, it is evident that a major revolution is already upon us. In three decades we have shifted from our nineteenth-century traditional position of virtually no public debt to a relatively high and rising public debt. For this there are three reasons: (1) the great increase in capital expenditures of local governments on capital projects, including roads, schools, sewerage disposal, etc.;²⁷ (2) the World War of 1914; and (3) the Great Depression. To these must now be added a fourth—defense expenditures incident to the second World

²⁴ and ²⁵ *Survey of Current Business*, January, 1939, p. 11.

²⁶ *New York Stock Exchange Yearbook*, 1937, p. 105. Average of first-of-the-month figures for 1935-37 inclusive.

²⁷ See Temporary National Economic Committee Hearings, Part 9, *Savings and Investment*.

War. War, depression, and the growing need of large-scale consumers' capital, which can be supplied only by the collective action of the country as a whole—these are the developments which in the last quarter of a century have led, and are leading, the way to a large and increasing American public debt.

The history of the federal public debt over a span of one hundred and fifty years clusters around five major episodes: (1) the early period of federal expansion, (2) the War of 1812, (3) the Civil War, (4) the first World War, and (5) the Great Depression.

The increase in federal debt which occurred in each of the three middle periods has to do with war. Any controversy with respect to public debt in such periods is not likely to run in terms of fundamental considerations. Debate is likely to be limited largely to the practical problems of financing—the extent to which it is feasible or appropriate to finance the war from taxation.

In the first and last periods, however, discussion with respect to the role of public credit ran in more general terms and disclosed deeper issues. The problem was not so much, or at least not so exclusively: How can expenditures inevitably imposed upon the country by imperious necessity best be met? The problem was in part: Shall the public credit be used as a positive instrument of government in order to reach certain desired ends?

The first period was under the spell of the great leadership of Alexander Hamilton. Hamilton fought for a vigorous use of the public credit in order to strengthen the position and the power of the new federal government. He did not fear the growth of what, for his day, was a huge public debt. Having regard for the relative fiscal capacity of the federal government then and now, one may confidently assert that the federal debt was larger at the end of Washington's administration than it is at the present moment.

Hamilton wanted to achieve certain goals for the new government. He could not achieve the ends he sought without

the federal government's incurring a large public debt. From this he did not shrink. Indeed, he argued that a considerable public debt, under certain circumstances, had definite advantages for the economy. He urged a fearless use of the public credit within appropriate limits, not merely for governmental ends, but also to achieve certain economic objectives.

To the horror of his opponents, who were eager to hold the public debt of the new federal government down to the lowest possible minimum, and whose aim it was to reduce it as soon as possible to zero, Hamilton proposed not only the assumption of the foreign-held debt (which was generally agreed to as necessary in order to preserve the nation's credit abroad), but also the assumption and funding of the Continental and Confederation domestic debt and even of the Revolutionary debts of the states. Together, these totaled \$79,125,000. For a struggling young government to assume a debt of over \$79 millions was regarded by his opponents as a highly dangerous proposal. Hamilton defended it, however, as the surest way of firmly establishing the new federal government.

He went farther than this. In his First Report on the Public Credit, issued January 9, 1790, he listed three benefits which he believed the economy would derive from the debt. He argued that merchants would, by reason of the public debt, be enabled to invest their unemployed capital in government bonds. This would yield an added source of revenue, and so enable them to trade for smaller profits. Moreover, the bonds would provide a ready source of credit when the merchant needed it for commercial operations. Similarly, agriculture and manufactures, he argued, would be promoted by the existence of public debt, not merely on their own account, but also because "the merchant whose enterprise in foreign trade gives them activity and extension" is benefited in the manner indicated above. Finally, he maintained that the rate of interest would be lowered by reason of the increased supply of liquid assets. Hamilton suggested that bonds

were, for certain purposes, virtually the equivalent of money. Accordingly, a large public debt would lower the rate of interest, "for this is always in a ratio to the quantity of money and to the quickness of circulation." Hamilton's analysis is restated by Dunbar as follows:

Hamilton saw that the revival of industry could only be accomplished by the aid of a sound mercantile credit, and that for the growth of this the establishment and regular operation of public credit were necessary. He saw the advantage which must accrue to the community when the resources of individuals locked up in claims against the government should become mobile by being converted into negotiable securities having a recognized standing in the market.²⁸

Such were the purely economic benefits which Hamilton saw in a public debt. From the standpoint of the new government, he saw in the assumption of state and Confederation debt a means of strengthening the central government.

Through the continual amortization of the funded debt he maintained that funds would be "liberated, and will be ready for any future use, either to defray current expenditures or be the basis of new loans, as circumstances may dictate." Thus managed the public debt was conceived of as a sort of revolving fund. The principle of debt amortization he regarded "as the true secret for rendering public credit immortal. . . . The successive liberation of the revenues, successively pledged, will afford resources that may almost be said to be inexhaustible." Public credit he regarded as "a means of accelerating the prompt employment of all the abilities of a nation." It is "not only one of the main pillars of public safety, it is among the principal engines of useful enterprise and internal improvement."²⁹

Hamilton's opponents charged him with being merely a

²⁸ C. F. Dunbar, "Some Precedents Followed by Alexander Hamilton," *Quarterly Journal of Economics*, 1888, pp. 32-59.

²⁹ Hamilton, *First Report on the Public Credit; Second Report on the Public Credit*. (See pages 46, 156-7, 170-2 in McKee's edition *Papers on Public Credit, Commerce and Finance*, by Alexander Hamilton.)

slavish follower of Pitt and English financial theories. Jefferson wrote to Washington in 1792: "This exactly marks the difference between Colonel Hamilton's views and mine, that I would wish the debt paid tomorrow; he wishes it never to be paid, but always to be a thing wherewith to corrupt and manage the legislature."⁸⁰ Hamilton, however, denied the thesis imputed to him by his opponents that "public debts are public benefits" under all conditions. He was realistic and specific. He argued that with the problems then confronting the new government, both from the political and from the economic standpoint, the "proper funding of the present debt will render it a national blessing. . . ."

The Congressional debates disclose opposition to this view. A member from Georgia argued that England was a melancholy instance of the ruin attending funding systems.

To such a pitch has the spread of funding and borrowing been carried in that country that in 1786 their national debt had increased to £230,000,000 sterling, a burthen which the most sanguine mind can never contemplate they will ever be relieved from. If future difficulties should involve that nation still further, what must be the consequence? The same effect must be produced that has taken place in other nations; it must either bring on a national bankruptcy, or annihilate her existence as an independent empire. Hence, I contend that a funding system in this country will be highly dangerous to the welfare of the Republic; it may for the moment raise our credit and increase our circulation by multiplying a new species of currency, but it must hereafter saddle upon our posterity a burthen which they can neither bear nor relieve themselves from.⁸¹

Hamilton was too keen to be befuddled over the "posterity burden" argument. He saw quite clearly what economists have always pointed out, that it is not a question of posterity versus the present generation, but rather a question of transfer from one group (the taxpayers) to another group (the bond-

⁸⁰ Jefferson, *Works*, Volume III, p. 464.

⁸¹ Thomas Benton, *Abridgement of the Debates of Congress*, February 9, 1790.

holders)—both groups being members of the same generation. Hamilton argued that there was merely a transfer of capital to the amount of the annuity from those who pay to the creditor who restores it to circulation.⁸²

Hamilton, arguing that certain positive economic benefits would accrue to the nation from a public debt, was confronted with the familiar *reductio ad absurdum* argument: If this is so, does it not follow that the more debt the better? Hamilton's answer was precisely the correct one to all such arguments, namely, that we must never lose sight of balance in economic life. It may be a good thing under certain circumstances to lower the price of steel by 10 per cent, but it does not follow that it must be good economic policy to force a reduction by, say, 90 per cent. It may be desirable to realign the foreign exchange value of a currency by 20 per cent, but it does not follow that an 80 per cent depreciation is desirable. And so for all economic policies. Hamilton put it as follows:

There are respectable individuals who, from a just aversion to an accumulation of public debt, are unwilling to concede to it any kind of utility; who can discern no good to alleviate the evil with which they suppose it pregnant; who cannot be persuaded that it ought, in any sense, to be viewed as an increase of capital, lest it should be inferred that, the more debt, the more capital, the greater the burthens the greater the blessings of the community.

But it interests the public councils to estimate every object as it truly is; to appreciate how far the good in any measure is compensated by the ill, or the ill by the good: either of them is seldom unmixed.

Neither will it follow that an accumulation of debt is desirable because a certain degree of it operates as capital. There may be a plethora in the political as in the natural body; there may be a state of things in which any such artificial capital is unnecessary.⁸³

⁸² Papers on Public Credit, Commerce and Finance by Alexander Hamilton (McKee edition, pp. 216-17).

⁸³ See Report on Manufactures, December 5, 1791 (McKee edition, *op. cit.*). Hamilton also notes the effect of an excessively large public debt on wealth concentration, the debt "serving only to pamper the dissipation of idle and dis-

Defending his own position, he admitted that he had

explicitly maintained that the *funding* of the existing debt of the United States would render it a national blessing; and a man has only to travel through the United States with his eyes open, and to observe the invigoration of industry in every branch, to be convinced that the position is well founded.

But whether right or wrong, it is quite a different thing from maintaining as a general proposition that a public debt is a public blessing; particular and temporary circumstances might render that advantageous at one time which at another might be hurtful.⁸⁴

Hamilton's position was vigorously opposed by Gallatin, who consistently resisted any increase in debt and continually sought to reduce any existing debt. This was true long before he became Secretary of the Treasury. As Senator from Pennsylvania from 1795 to 1800, he fought the financial measures of the Administration. War was by many thought imminent, and this presented squarely the problem: Should the government increase its debt or neglect its defenses? The Federalists did not hesitate to choose an increase in the debt in order to achieve a substantial army and navy. Gallatin, holding a large public debt to be a menace, believed the national safety and security could best be promoted by spending less on defense and more on debt reduction. For him, the discharge of the public debt became an uncompromising dogma. Jefferson and Madison supported his principle, but were sufficiently realistic to modify the policy when circumstances justified large governmental expenditures necessitating an increase in the national debt. Thus, Jefferson's ideas with respect to the public debt did not prevent him from embarking upon large expenditures springing from the war with Tripoli and the purchase of the Louisiana Territory. Gallatin, however, with singleness of purpose and rigorously adhering to his dogma, opposed both. In 1807 the threat of war brought further

solite individuals," and making the sums required to pay interest oppressive. The latter would be particularly true in a society such as Hamilton's which relied mainly on consumption taxes.

⁸⁴ Letter to Philadelphia Gazette, September 11, 1792.

sharp increases in expenditures, followed by reductions in the next two years. But the War of 1812 blasted Gallatin's hopes of paying off the debt, and he resigned as Secretary of the Treasury. The debt had risen from \$45 millions in 1811 to \$100 millions in 1814.

The particular economic arguments advanced by Hamilton in support of the use of public credit have, of course, little relevance to the controversies of today. What is of interest for us is not the particular form of his argument (except for his recognition that an internally-held debt represents a transfer and not a burden), but rather the fact that he resisted the general dogma that public debts are inherently bad. He was realistic in his approach. His opponents were dogmatists who insisted that a public debt is, at all hazards, to be avoided except under the painful necessity of war; that no benefits may be derived from the use of the public credit from the standpoint of the economy; that its consequences are all harmful; and that, if unavoidably incurred, it should be reduced to a minimum at the earliest possible moment. Hamilton recognized public credit as a useful instrument of governmental policy. The economic ends he sought were, for the most part, not the ends we seek today, but the principle is still valid. It is necessary to look behind the instrument to the economic realities and to the results which can be expected to flow from the use of the public credit.

VI. *Limits to the Public Debt*³⁵

Considerations with respect to the magnitude of the public debt involve an analysis of the very difficult concepts of taxable capacity and taxable income. Taxable income may be defined narrowly as that portion of the national income which passes through the commercial market and which is

³⁵ Compare David M. Wright, "The Economic Limit and Economic Burden of an Internally Held National Debt," *Quarterly Journal of Economics*, November, 1940; also chapter by R. A. Musgrave and B. H. Higgins in *Public Policy*, Vol. II, Annual Yearbook of the Graduate School of Public Administration, Harvard University, 1941.

received in the form of money. Obviously, however, a very considerable part of the national income is received in the form of services without passing through the money price mechanism. In the broader sense, therefore, taxable income may be said to include not only the monetary income upon which the tax collector can lay hands, but also that portion of the income received directly in the form of services, whether rendered by the government or by individuals (housewives, for example) without monetary recompense.

The term "taxable capacity" may thus be defined in various ways. Taxable capacity may be conceived of in terms of (a) the money income, (b) the money income plus the income derived from free governmental services to which, however, a fee might have been attached, and (c) the entire income of the community, whether derived within the price mechanism in the form of money receipts or outside of the price mechanism in the form of directly consumed utilities and services.

The question now arises what types of governmental expenditures may increase the taxable capacity or the taxable income. Clearly, governmental capital expenditures which are remunerative in character and produce a money income are precisely similar to private capital expenditures. Moreover, expenditures which increase the flow of utilities and services (such as parks and playgrounds), but for which no commercial price or fee is charged, may, nevertheless, furnish quite legitimate ground for permitting an increase in the national money income sufficient to permit the *transfer payments* without encroaching upon the monetary income remaining in the hands of the public, and which would be available for private investment and consumption expenditures. An increase in real income justifies a corresponding monetary expansion, whether springing from an increased output of goods and services placed on the market by private entrepreneurs, or from goods offered freely by the government without price or charge. Monetary expansion equal to the rise of real income does not mean price inflation. In-

deed, without an increase in the money supply (assuming velocity constant) the *transfer* of funds through the public fisc would tend to cause deflation.

Thus, public investments, the services of which are offered without charge to the community, may through appropriate monetary expansion increase the taxable capacity in the sense of increasing the taxable money income. That they increase the taxable capacity is perfectly clear if the benefits from such investments are placed within the framework of the price mechanism by charging a fee for the services rendered, and if the monetary authority permits a sufficient monetary expansion to allow the collection of such fees without encroaching upon the monetary transactions of the private sector of the economy. All this will be equally true if we substitute a general tax levy in lieu of the special fee attached to each service rendered.

The monetary taxable capacity and monetary taxable income can, of course, quite easily be increased (once full employment by the loan expenditure method is reached) sufficiently to match the increased taxes, so that no encroachment upon the monetary funds available for the purchase of goods privately produced need occur. Thus, the receipt of a certain quantity of free goods would justify a monetary expansion. When private capital expenditures result in additional output of commodities or services, a monetary expansion adequate to circulate these goods at a profitable price is justified. Equally, when the government provides free services, some appropriate monetary expansion is justified. This would permit the collection of taxes sufficient to cover the expenses of operation, together with amortization and interest charges, without any reduction in the media available for monetary transactions. In so far as the governmental expenditures call forth the utilization of unemployed resources which otherwise would not be used, not only is the taxable income increased, but the increase is dependent upon such outlays. In the event that full employment has already been reached, any further expansion of government-

tal services would encroach upon, and become a substitute for, real income privately produced. But there is no *a priori* reason to suppose that the magnitude of the real income will be any smaller in the one case than in the other.

A second consideration with respect to the size of public debt has to do with the relation of debt to prices. The fear is frequently expressed that an increasing public debt must eventually produce a price inflation. This conclusion is not justified. No general statement can be made without an examination of the special circumstances in each case. The deficit may be financed by: (a) borrowing from the banks, (b) borrowing from accumulated idle balances held by corporations and individuals, and (c) borrowing from the current income of the individuals and corporations. The first method of financing results in an expansion of the money supply (demand deposits); the second results in an increase in the velocity of circulation. Whether new money is created or idle money is put to active use, in either case the income stream (MV) is increased. But this process will not cause a price inflation as long as it is possible to match the increasing stream of money income with a corresponding increase in flow of real income. In short, as long as there are unemployed resources neither of these methods of financing a deficit constitutes a dangerous threat to price stability.

Once full employment is reached, it is no longer possible to increase appreciably the flow of real income. At this point it becomes necessary, if price inflation is to be avoided, to stop any further increase in the money income stream. But it does not follow that even in this situation a continuing deficit must necessarily produce price inflation. What is true is that the deficit must no longer be financed by monetary expansion. If, however, the deficit is financed by diverting a part of the current income stream to the government through borrowing from the public, there is no ground for fearing inflation. A continuing deficit, even at full employment, need not result in price inflation.

Continued governmental expenditures would be necessary

to maintain full employment if, in the absence of such a program, a part of the income stream would otherwise be diverted into idle balances. Income, output, and employment would, accordingly, decline. By diverting these otherwise idle funds into spending channels, the money income stream can be kept flowing and the real income maintained. But this process would not result in price inflation. As long as the deficit is financed by borrowing from the current stream of savings, a continued increase in the public debt will not of itself produce inflation.

It is sometimes argued that the mere size of the public debt may cause inflation. This argument rests on the supposition that a huge debt represents a heavy burden upon the community and strains the taxable capacity of the government. It is said that the government may find it impossible to carry on its normal operations and, in addition, to meet the interest obligations on the debt. Accordingly, so it is argued, the government may be compelled to resort to the printing press, and thus an inflation will be produced.⁸⁶

This reasoning is essentially erroneous. An internally-held debt represents a transfer of funds *within* the community. It is true that attention must be paid to the character of the tax structure through which the transfer payments are effected. Finally, in appraising taxable capacity it is necessary to keep in mind both aspects of fiscal policy—expenditures no less than taxation.⁸⁷

⁸⁶ The inflation experience of Germany in the postwar period is sometimes cited. It is not possible at this point to consider the maze of special circumstances, including quite unsound public policies, on the part of both Germany and the Allies, which produced this inflation. For the purpose in hand, it is sufficient to point out that Germany's internal debt in relation to income was not as large as England's. The inflation can adequately be explained on other grounds.

⁸⁷ Confronted with a national debt equal to twice the British national income, the Colwyn Committee was nevertheless able to conclude as follows: "In our opinion the present taxation—even in conjunction with the loss of material wealth due to war expenditure, which lies behind the National Debt—is not one of the main causes of industrial difficulty. . . . So far as taxation is concerned, we think that, if general conditions improve and times become

Too frequently discussion with respect to the problems of a rising public debt and ability to service the interest charges, proceeds on the assumption of a static national income. This assumption is highly unrealistic. To make the system of free enterprise workable, it is absolutely necessary to ensure a rising national income. Should the income remain stationary, rising per worker productivity would imply an ever-growing volume of unemployment. A static national income, with or without a rising public debt, would wreck the economic order. During the nineteenth century, and up to the first World War, the real national income in the United States increased by around 4 per cent per annum. We cannot expect this rate of increase in the future, owing to a much slower rate of population growth. But we have a right to expect in the next half century a rate of increase in real and money income of 2 or $2\frac{1}{2}$ per cent per annum. In fifty years this would give us a national income of around \$250 to \$300 billions of dollars at 1940 prices.

The popular belief that a large public debt tends to produce inflation has, no doubt, arisen in part from the fact that price inflation in wartime has usually been associated with a large increase in the public debt. It is, of course, true that vast war expenditures piled on top of private expenditures (inadequately curtailed by taxes or by borrowing from current income) will produce an inflation. But this is quite another matter. The question here has to do partly with the magnitude of the expenditures and partly with the manner in which they were financed. A too rapid *increase* in debt, particularly when it is accompanied by a rapid increase in bank credit, will produce an inflation. But it does not follow from this that a large debt *once reached* will result in inflation. Once the expenditures are over, the magnitude of the debt per se will not produce inflation.

It is true that a country with an enormous debt will have

more prosperous, the burden will be carried with comparative ease." Cmd. 2800, p. 245.

a larger budget owing to the interest charges. Accordingly, if the national income is allowed to fall drastically, tax receipts will fall sharply and a large deficit will be incurred—larger by reason of the debt. But under these circumstances the government will be compelled to cope with a deflationary situation, not an inflationary one.

The argument may, however, shift from inflation to deflation, and the question is raised: Is it not likely that a huge debt will cause deflation? This view appears superficially to draw support from the observed events following a great war. It is noted that, in these circumstances, countries saddled with a great debt frequently experience a serious postwar deflation. The difficulty, however, does not arise from the magnitude of the debt, but from the strenuous effort made to repay a large part of the debt. In the absence of a vigorous private investment boom, the retirement of any considerable part of the debt will produce deflationary consequences.⁸⁸

What has been said with respect to inflation and distribution of wealth and income implies that there are limits to the public debt which, if exceeded, will tend to affect the workability of the economy. But these limits must be conceived of, not in terms of a fixed amount or a static situation, but in terms of a dynamic process. Account must be taken of rates of change and the magnitude of the public debt in relation to other magnitudes, especially the ratio of debt to national income. With respect to rates of change, a too rapid increase in loan expenditures at full employment will produce inflation. With respect to proportionality, a large debt in relation to national income may imply a disproportionate amount of wealth invested in government bonds and held by the wealthy classes.

⁸⁸ The case of the United States in the decade of the twenties is often cited as an example of the wholesome economic effects of a program of debt retirement. It should be noted, however, that public debt as a whole, including federal, state, and local, did not decline in this decade. Moreover, the accumulated shortages (housing, for example) caused by the war, together with other factors, produced a vigorous investment boom. Under these circumstances, some net retirement of total public debt (federal, state, and local) might have been desirable. The retirement of federal debt in fact, however, merely offset the rise in state and local debt.

The rentier class might accordingly become too large at the expense of the active elements in the country. Even an ideal tax structure will restrain more or less the inducement to invest, and a regressive tax structure will unduly restrict consumption. Diversion of a large part of the income stream into interest payments on government bonds would tend to raise the propensity to save, thus intensifying the savings-investment problem.

Much of the discussion about the limits of the public debt is wholly unrealistic. There are no rigid and fixed limits. The problem is a manageable one, and can best be taken care of by ensuring that taxation is adequate: (1) to prevent inflation and (2) to provide a reasonably equitable and workable distribution of wealth and income. Within the limits set by these criteria, it is possible to determine, according to varying circumstances, what proportion of public expenditures may advantageously be loan-financed and what proportion should be tax-financed.

VII. Controlled Borrowing

There are three ways in which governmental expenditures designed to secure full employment may be financed: (1) by the creation of interest-free, or virtually interest-free, money, (2) by borrowing at the market rate, and (3) by taxes.

There are many who favor a strong expansionist fiscal policy, but who wish nevertheless to avoid an increase in the public debt. Some wish by highly progressive taxes to balance the budget⁸⁰ at an expenditure level sufficiently high to produce full employment. Others would regard such a tax structure as altogether too repressive, and favor financing the expenditures from interest-free money.

Crude greenbackism, that is, the printing of paper money, is no longer seriously proposed. Even during the financial stress of the first World War no government resorted to this

⁸⁰ The phrase is here used in the sense commonly employed, namely, tax receipts adequate to cover all expenditures, including both operating and capital expenditures.

practice. The essential reason, of course, is that under modern conditions notes or currency are relatively little used as means of payment. Modern money consists of demand deposits, and so "modern greenbackism" seeks to devise schemes by which deposits can be created without the incurrence of interest-bearing debt.

Various methods to implement the latter proposal have been suggested. The Federal Reserve Banks might be required by law, at the request of the Secretary of the Treasury, to make interest-free loans to the government. Treasury deposits thus created at the Federal Reserve Banks would be spent in the usual manner by the government on public works and even on regular expenditures. Objection to this proposal could be raised on the ground that the spending of such deposits would create excess reserves, precisely as in the case of the spending of deposits created by the issue of gold certificates to the Federal Reserve Banks. To this some have replied that excess reserves are not important (and perhaps even to be welcomed), and others have suggested that this problem could quite well be taken care of by adopting the "hundred per cent reserve" plan, or else by giving the monetary authority unlimited powers over the reserve requirements. Another proposal which avoids the excess reserve problem is to compel the commercial banks to make interest-free, or virtually interest-free, loans to the government. Thus, the London *Economist*⁴⁰ suggested that in the case of war loans the banks should be compelled to take government bonds at one half of 1 per cent interest. In view of the extraordinarily low rate on short-term Treasury bills, and in view of the large amount of these purchased by the banks, it could be argued that this proposal was, in effect, substantially carried out in the United States in the period 1933-36.

The paper money issued by the American colonies, while

⁴⁰ See "The Technique of Inflation," London *Economist*, January 27, 1940. See also A. A. Berle's proposal in Hearings Before the Temporary National Economic Committee, Part 9, *Savings and Investment*.

at times used to help finance wars, was typically issued as loans to finance private business. The rate of interest was commonly 5 or 6 per cent. The loans were secured by mortgages on land and houses and were to be paid back in annual installments. Yet, in part, the issues were used to finance the government on an interest-free basis. These paper money issues were successfully made in the Middle Colonies, especially Pennsylvania, New York, New Jersey, and Delaware,⁴¹ but with rather unfortunate consequences in some colonies. Benjamin Franklin relates in his *Autobiography* his part in the paper money movement in Pennsylvania. Besides publishing the first book supporting the issue of paper money, he himself wrote, in 1729, "A Modest Enquiry into the Nature and Necessity of a Paper Currency."

Pennsylvania made new issues periodically for about half a century, beginning with 1723. During the first half of this interval the price level remained substantially stable, but rose about 30 per cent during the second half under the impact of larger issues used to help defray the expenses of the French and Indian Wars. This successful paper money experiment is summarized by a contemporary as follows:

"The singular prosperity of the province may be attributed chiefly to the economical habits of the people and the genius of their jurisprudence, partly to the prudent policy of promoting enterprise by feeding circulation with loans of paper money, gradual yet moderate." ⁴²

The modern banking system, with its freedom to create demand deposits on a fractional reserve basis, essentially issues "paper money" through the loan-deposit operations. And this "multiplication of currency" has given us an ever-expanding money supply corresponding more or less to the increasing volume of trade. If, however, the banking system is called upon to finance the government deficit, there might

⁴¹ See Richard A. Lester, *Monetary Experiments*, Princeton University Press, 1939. This book, carefully documented, gives a wealth of information on paper money experiments in the American colonies.

⁴² George Chalmers, *Introduction to the History of the Revolt of the American Colonies*, quoted in Lester, *op. cit.*, p. 111.

be no relation between the requirements of trade and the money supply thus created. If the deficit is large—\$3 or \$4 billions per annum—the continued growth in demand deposits would quickly outrun the secular rise in output. Contrary to the crude monetary theory, we know, however, that this situation does not necessarily produce a price inflation, but may only result in a decline in the velocity of circulation. In the absence of private investment outlets adequate to produce full employment, the governmental expenditures could be controlled so as to prevent a price inflation. But if large governmental expenditures are required to promote full employment, and if the deficit is financed heavily by bank credit and not out of savings, the money supply will continue to rise, and may rise far more rapidly than the upward trend in the physical volume of trade.

The multiplication of the money supply at the beginning of a recovery from any considerable depression is desirable. The means of payment are inadequate at this point to circulate a full-employment output of goods and services. At this point it is, therefore, permissible to finance a part of a governmental recovery program through the sale to banks of low-interest-bearing, short-term bills. But a progressive multiplication of money beyond the requirement of market transactions drives interest rates on government and gilt-edged securities to an artificially low level. Not only are the banks deprived of reasonable earning assets adequate to support the expenses necessary to furnish the public banking services, but, in addition, social security trust funds, savings banks, life insurance companies, and educational and other nonprofit institutions are deprived of a reasonable return. These services must, therefore, be financed in some other way.

Thus, the apparent escape from the payment of interest charges, it turns out, entails expenditures by the community elsewhere. Moreover, there is something wholly artificial in the continued multiplication of money far beyond the requirements of trade. Pushed to its logical conclusion it

means, in fact, the gradual "euthanasia of the rentier."

It is just here that a strong case can be made for a continuing deficit corresponding to the requirements of thrift savings streams. Life insurance, savings banks and other thrift institutions, baby bonds, and social security trust funds⁴³ have taken in recent years annually about \$3 billions of government issues. Institutional thrift streams rightly seek, wholly or in large measure, the safest type of security: namely, government bonds. A wide diffusion of property ownership is thereby encouraged. There is thus a solid basis in these thrift streams for controlled borrowing. Here one finds a reconciliation between the principle of thrift and governmental loan expenditures.⁴⁴

In so far as the government can borrow from small savers, an increase in the public debt will not prove unfavorable to an equitable distribution of wealth. But if the growth in the public debt is very rapid, it will not be possible for relatively small savers to take any large proportion of the new securities issued. They will be absorbed by the rich and the well to do, and by large corporations. A rapid growth in the public debt is, therefore, likely to intensify the inequality in wealth distribution. This is the most fundamental objection that can be raised against financing mainly by borrowing.

To mitigate this inequality in wealth and income it is necessary to finance the large proportion of government expenditures from taxation. Indeed, this is the primary function of a steeply progressive tax structure. Were it not for the fact that a rapidly mounting public debt tends toward wealth concentration, borrowing is always to be preferred to taxation, since borrowing is always a more expansionist method of financing expenditures. Expansion should, of

⁴³ As I have often stated, I do not favor large accumulations of social security reserves. Except for contingency reserves, this part of the current thrift stream should be eliminated.

⁴⁴ It is true that baby bonds have been taken largely by wealthy individuals. But it is believed that the "baby bond plan" could be implemented so as to reach a large number of small savers.

course, always be restricted to the point of reasonably full employment in order to prevent price inflation. In the event, however, that huge governmental expenditures *must* be made (as in wartime), taxation serves a further purpose. Diversion of resources from private consumption to war outlays becomes absolutely necessary, at least when the economy approaches full employment. If this diversion is not achieved, if the war expenditures are piled on top of private expenditures, inflation of commodity prices will inevitably follow. Taxation is a powerful device to achieve this diversion of resources. And this is especially true of taxes which weigh heavily on private consumption.

With respect to income distribution, it may be noted that historical studies, fragmentary as they are, point to the remarkable conclusion, suggested by Pareto, that the slope of income distribution has remained relatively constant in widely diverse periods in modern history and in different countries, despite the varying institutional arrangements which have emerged in consequence of modern social and political movements. It is a remarkable thing that the slope of income distribution in England, according to the studies of Sir Josiah Stamp and others, was apparently substantially the same in 1920 as in 1800, despite the fact that there had intervened between these periods the prodigious rise of modern machine industrialism, the emergence of trade-unions, the development of labor legislation, the rise of the modern corporation, the expansion of world trade, the revolution in the character of taxes weighing on production costs, and the upheaval of the first World War itself. Similarly, in the United States, the researches of Willford I. King and the National Bureau of Economic Research point to the conclusion that the slope of the income distribution was not greatly altered in this country over the period of the last century.

This remarkable apparent fact has led certain writers to the conclusion that some imperious necessity fixes the income distribution so that it may be regarded as more or less of a natural phenomenon. One basic ground for such an as-

sumption is, of course, the distribution of native capacity in any population, which distribution has probably not changed materially over many centuries. Given this distribution of native capacity, there is at least some warrant for the belief that institutional arrangements are less powerful than is sometimes supposed in altering the manner in which the income is distributed. As long as we stick rigorously, as income statistics usually attempt to do, to the primary distribution of income—that is to say, the distribution of income to the factors of production prior to taxes on income—a sufficiently adequate reason for this historical development may, perhaps, be found in the pricing process. More and more, however, this primary distribution of income is likely to be modified by reason of the more equalitarian distribution resulting from a highly progressive tax structure. This, at any rate, would be true in so far as the secondary distribution—the distribution of income after taxes—affects property ownership and through this, in turn, the primary distribution of income. Thus far, apparently, the tax structure in the United States has not been sufficiently progressive to have had this effect.

The attack on chronic unemployment by means of public expenditures financed by a continually rising public debt is essentially a conservative proposal. This is true in the respect that it does not necessarily involve a redistribution of income unfavorable to property owners. Indeed, as we have noted, too great a reliance on borrowing could easily lead to an undue concentration of wealth. This would especially be the case if the interest (and amortization charges in the case of capital projects) were covered in large part by regressive taxation.

Yet, even though this undesirable method of taxation were applied, the effect on the lower income groups would not be nearly as serious as a condition of chronic unemployment. Moreover, the taxes collected would presumably represent payments for worth-while utilities flowing from public expenditures. These might quite conceivably be of such a char-

acter that they would raise the standard of living even higher than could be reached by the consumption of an equivalent amount of commercially-produced commodities. The payment, by means of regressive taxation, for public benefits flowing, for example, from capital projects over a long period of time would be no more burdensome upon the masses than the purchase of commercial products at a uniform price, the same alike for rich and poor.

No clear insight into the problem of borrowing and the interest charges incident to a rising public debt is possible without making a thoroughgoing integration of taxes with the general price structure. Taxes are compulsory prices, so to speak, charged for government services. Commercial prices are charges collected under voluntary choice (though affected by modern high-pressure salesmanship and advertising techniques) for utilities flowing from the stream of goods offered to the community by private business enterprise.

Nor can it be argued that loan-financed expenditures on capital projects, for which the annual charges are subsequently financed out of regressive taxation, have no stimulating effect on the economy. For the full effect of the loan expenditures on employment is felt when the project is constructed, and the subsequent taxation cumulates in small increments over the whole lifetime of the durable capital good. In contrast, if current expenditures were wholly financed by means of regressive taxes, they would have no expansionist effect, since they would merely divert a part of the income stream from private consumption to community expenditures.

Governmental expenditures may, however, be income-stimulating without being loan-financed. It is true, as just noted, that if the expenditures are financed from consumption taxes, the effect is obviously merely to divert resources without increasing the total income flow. But if financed from progressive taxation, thereby tapping a stream of savings which might not have found outlet in productive activity, adequate expenditures may be expected to drive the na-

tional income by a cumulative process up to the full income and full-employment level. At first, while the national income was still rising, the expenditures might be largely loan-financed. But after the national income had approached full employment levels, a sharply progressive tax structure would then draw in an amount of taxes sufficiently large to balance the budget, including both operating and capital expenditures.

There can, of course, be no assurance that this, in fact, would occur without further increases in expenditures or tax rates, or both. The closer one approaches full employment, the less effective expenditures become in raising the national income without causing a concomitant rise in prices. The higher the level reached, the smaller the effect on employment, and the greater the effect on prices. To check inflation, tax rates might have to be raised very high. A more stable equilibrium could be reached at a lower employment level. But even at a moderate approach to full employment, expenditures and tax rates would both have to be pushed to levels higher than necessary if some reliance were placed on loan expenditures. That this must be true of tax rates is, of course, obvious. That it is true also of expenditures follows from the fact that loan expenditures have a higher potency in income stimulation than tax-financed expenditures, even though the taxes are progressive. For even the funds raised from progressive taxation would, in part, have been expended for consumption or investment, had they not been taken in taxes. Taxation, though progressive, always involves some curtailment of consumption and, therefore, a mere *diversion* of the income stream. To the extent that tax-financed expenditures merely serve to *divert* income, they can obviously not be income-generating expenditures.

Governmental expenditures may thus appropriately be financed under certain conditions and within proper limits (a) by an increase in demand deposits through borrowing from the banks, (b) by borrowing from the public, and (c) by taxation. Main reliance must, on balance, be placed upon

taxation in order to prevent too great concentration of wealth. But there is a legitimate place for loan financing within appropriate limits on a continuing basis. At times, the requirements of trade call for an increase in the money supply (demand deposits mainly), and this may properly be accomplished by borrowing from the banks at low, short-term rates of interest. But after the requirements of trade and the desire for liquidity have been reasonably satisfied, no useful purpose is served by a continued multiplication of the money supply such as would inevitably follow from a program to finance expenditures wholly through interest-free issues, or even from continued borrowing at the banks at market rates. The ensuing redundancy of money would drive the interest rate to a level which would strike at the position of thrift institutions and, in general, the creditor class. It would create an artificial degree of liquidity. It would result in the accumulation of vast unused cash resources which, in a world of changing and volatile expectations, might magnify the instability in the price structure.

If this analysis is sound, it points to the conclusion that the public debt, taxes, and changes in the money supply are all part of a balancing mechanism. How much reliance should be placed on each as a means of financing government expenditures depends upon a variety of considerations. It involves judgments with respect to the adequacy of the means of payment, adequate liquidity, the importance under certain conditions of using relatively expansionist and less restrictive methods of financing, the appropriate (socially desirable) degree of inequality of wealth and income, the relative desirability of tapping savings streams through borrowing (increasing the public debt) or through taxation. A limited increase in the public debt tends to promote a wide distribution of property in so far as the new issues are purchased by thrift institutions. On the other hand, a very rapid increase in the public debt necessarily implies a relatively light tax burden on upper-income groups and on corporations, tending to promote concentration of wealth and in-

come. It is considerations such as these that one must bear in mind when one seeks to appraise the role of public debt and to determine how rapidly it may be permitted to rise.

A public debt, internally held, is not like a private debt. It has none of the essential earmarks of a private debt. The public debt is an instrument of public policy. It is a means to control the national income and, in conjunction with the tax structure, to regulate the distribution of income.

Chapter X

BUDGETARY THEORY AND
PRACTICE

*I. Private versus Public Budgets*¹

THE essential purpose of budgeting expenditures and receipts is to obtain a clear conception of the financial operations of an economic unit. This is true for the public economy no less than for private individuals or corporations. The significance of the accounts and the uses which one wants to make of them may, however, be very different in the public and in the private sphere.

It is customary for the layman, and also for many writers on public finance, to apply the same tenets of financial theory and practice to governmental bodies that are applied to private business. But even those who do so are far from consistent. Especially is this true in regard to budgetary theory and practice. Adapting the rules of private finance to the state, they nevertheless fail to carry this point of view over into public accounting procedure, particularly with respect to the budgeting of capital expenditures.

Expenditures on capital goods are given a special treatment in private accounting. Capital outlays are not lumped in with operating expenditures. Producers' capital is expected to yield a monetary return over its economic lifetime, and consumers' capital is expected to yield a flow of

¹ See the illuminating chapters on public budgets in *Public Policy*, Yearbook of the Graduate School of Public Administration, Harvard University, 1941, by Harvey S. Perloff, Spencer Thompson, Robert H. Rawson, and Charles Stauffer.

utilities. It is accordingly recognized that expenditures in the operating budget ought to be treated by accounting theory and practice in such a manner that they will run parallel to the flow of money returns or utilities over time. A complete accounting of annual costs should include not merely the ordinary operating expenses, but also the capital charges of interest and depreciation. These latter must be charged against income in order to determine whether a year's operations have been profitable or not. And in the case of consumers' capital they must be charged against the value of the flow of utilities in order to measure accurately the economic validity of such projects. But the capital outlays initially made are not included in the current operating budget. Only by differentiating the capital expenditures from the current capital charges can we get a clear notion of whether or not the budget is balanced.

For the public economy, expenditures ought to be weighed not in terms of the profit and loss of the state itself, but rather in terms of the effect of such expenditures on the full and efficient functioning of the economy as a whole. Fiscal policy is an important instrument for maximizing the real income of the community and for regulating the distribution of income and wealth. At times it will be sound policy to balance the budget and at times it would be disastrous to do so. Only in the event that one applies the maxims of private finance to the public economy will one be concerned *per se* with the problem of balancing the budget.

All modern governments own and operate some state enterprises which yield a money return more or less covering all operating costs, including the capital charges of interest and depreciation. The United States Post Office is a gigantic business enterprise. Many European governments, and some American cities, own and operate public utilities. The federal government owns many so-called self-liquidating projects. Yet, as far as the federal government is concerned, private accounting practice is not applied to these projects. Capital expenditures are lumped in with ordinary operating

expenditures and a quite distorted view is arrived at with respect to whether or not the budget is balanced.

Precisely the same applies to governmentally-owned consumers' capital, such as roads, parks, and public buildings. In private accounting no individual confuses capital outlays on a home with his ordinary living expenditures. No individual believes that his budget has become unbalanced merely because in building a home his expenditures exceed his income. Moreover, in budgeting his annual living expenditures he includes, or should include, not merely the cost of operating the home (fuel, light, etc.), but also annual capital charges—interest and depreciation. Governments, however, typically lump all expenditures, whether capital or operating, into a single budget. Thus, private accounting theory and practice is violated, and it becomes quite impossible to know whether or not the budget is really in balance.

The use of the capital budget in governmental accounting cannot, however, be justified by reference to private financial practice. If one adopts wholeheartedly the principle that governmental financial operations should be regarded exclusively as instruments of economic and public policy, the concept of a balanced budget, however defined, can play no role in the determination of that policy. One cannot examine with an unprejudiced mind the economic validity of a program of expenditures, loans, and taxes if one is hampered by the dogma that the budget must be balanced. From this point of view, if there is any value in incorporating into governmental accounting practice the technique of the capital budget, that judgment must rest on other grounds than that such a technique aids in determining whether or not the budget is really in balance.

There are, however, valid grounds for favoring the capital budget device. The essential purpose of accounting is to maximize efficiency in the use of productive resources and to eliminate waste. Waste in the use of public funds is no less reprehensible than the waste of private funds. The notion, so frequently expressed, that those who favor large

governmental expenditures are unmindful of waste is, of course, quite mistaken. First and foremost, it is important to eliminate the waste of unemployment. It is true that full employment might be secured by wasteful expenditures. But such action has, of course, no economic justification. Once full employment is reached, it will be discovered that the real income falls far short of what is desired, and every effort should be made to employ the productive resources to the best possible advantage. Public accounting is a necessary instrument to secure efficiency in the government's financial operations. And it is essentially as a tool to further this end that the capital budget device deserves careful consideration. As an accounting tool, it may help to determine the appropriate *direction* of public expenditures and the degree of efficiency achieved. But it can tell us nothing about whether or not public expenditures ought to be increased or decreased or how they ought to be financed, whether by borrowing or by taxes. The capital budget is a valid tool of analysis, though for different reasons, whether one applies to governmental financial operations the principles of private finance or the criteria appropriate for public policy.

II. The Capital Budget

Whether a unitary budget or a multiple budget form is used by a government, it is, at all events, important that the principle of budgetary comprehensiveness shall not be lost sight of. The unitary budget, of course, fulfills automatically this requirement. There is, however, nothing incompatible between the principle of budgetary comprehensiveness and a multiple budget system. If a multiple budget system is used, involving a general budget and special budgets, it is nevertheless wholly feasible, and indeed urgently necessary, that a general over-all picture shall be presented.

It is particularly important that an over-all "liability balance sheet" of the government shall be clearly set forth. Such a balance sheet should include not only the direct liabilities

of the government, but also the contingent liabilities incident to the issue of government-guaranteed bonds by more or less self-sustaining governmental corporations.

It is, moreover, desirable to give an over-all view of the cash-income, cash-outgo budget position of the government from year to year and from month to month. Such an accounting will indicate something more than the mere rise or fall in the government deficit. It will show the cash income and cash outgo, taking account not only of all governmental receipts (other than from the sale of obligations) and expenditures of whatever nature, but also of the receipts and expenditures of trust funds which come within the scope of Treasury management and control. A striking example of the divergence between the fiscal budget and the cash budget is found in the case of the Social Security trust funds. Beginning with January, 1937, with respect to the Old Age Reserve Account, sums were withdrawn through payroll taxes greatly in excess of the benefits which were paid out. For this and other reasons the cash budget deficit was only \$198,000,000 in 1937, while the fiscal deficit was \$1,150,000,000.

An over-all view of governmental fiscal operations may also make it desirable to present a monetary budget revealing the effect of the fiscal operations of the government upon the income stream. The cash budget differs from the monetary budget in that the net cash outlays differ from the net income-generating expenditures. The former takes account of cash receipts (except those from borrowing) and total cash outlays of all governmental agencies, including trust funds. The latter excludes those tax revenues which are not abstracted from the flow of private expenditures and which are drawn from idle balances.² On the other side, it excludes those outlays which do not add to the spending power of the

² The figures "net income-creating expenditures" as calculated by the Research Division of the Federal Reserve Board do not wholly conform to the definition given above, since they do not exclude all nonconsumption taxes. The following is an example illustrating my definition of net income-generating

community, such as those for debt retirement. Obviously, the monetary budget presents serious statistical difficulties and, at best, can be only an estimate in the determination of which judgment and hypothetical speculation play a large role.

It may, moreover, be desirable to present an over-all comprehensive picture of (a) the original cost and (b) the cost of replacement, less depreciation, of the stock of durable goods held by the government. Such an inventory kept up to date currently would certainly be of great significance for accurate accounting purposes, and particularly with reference to the planning of revenues and expenditures for amortization and replacement. The experience with respect to the valuation of the American railroads under the LaFollette Act indicates, however, that to attempt now a valuation of all of the properties of the government would be an extremely difficult and expensive undertaking, and serious question may be raised whether it is worth while. It is a different matter to apply such accounting procedure, however, to expenditures made in the future and thereby gradually develop over many decades a fairly complete inventory of public wealth.

A multiple budget can satisfy the requirements of comprehensiveness equally as well as a unitary budget. Moreover, it permits both greater flexibility of management and a clearer perception of the financial operations of the government. The following elements may be included in a comprehensive multiple budget setup.

- I. Operating Budget
- II. Capital Budget
 - A. Public Works: Nonremunerative
 - B. Self-liquidating Projects

expenditures. Assume government expenditures of \$10 billions. Assume consumption taxes of \$3 billions and nonconsumption taxes of \$4 billions. The net income-generating expenditures will then be \$7 billions. Net income-generating expenditures so defined can be added to private investment expenditures to get the total outlays offsetting saving.

C. Investment in Government Corporations and Independent Authorities

III. Annexed Budgets

A. District of Columbia

B. Post Office Department

C. Government Corporations

D. Self-liquidating Governmental Credit Agencies, Loans, and Revolving Funds

E. Trust Funds

The question of the appropriate classification of public expenditures is an important one. Expenditures have, in some countries, been divided into "ordinary" and "extraordinary"; and again into "operating expenditures" and "capital expenditures." Most commonly, all expenditures of whatever kind have been included within a single or unitary budget. Some countries have, however, used a double budget system. Under a true double budget, current and operating expenditures are accounted for in an operating budget and capital outlays in a capital or investment budget.

Professor Erik Lindahl, Swedish economist, has stated the problem of current and capital budgetary accounting and its significance for the concept of budget balancing as follows:

Every budget is of course formally balanced, since the sum of the items on the expenditure side must always be covered exactly by revenue. A demand for a balanced budget must therefore mean that the sum of *certain* kinds of revenue must be equal to the sum of *certain* kinds of expenditures. The most natural procedure is to start either from total *current revenue*, i. e., revenue other than that arising from the sale of capital assets or from borrowing; or from total *current expenditures*, i. e., expenditure that does not lead to an increase in the aggregate net assets of the community. If these two are exactly equal, the budget is obviously balanced in the sense that the net value of total public assets remains unchanged. . . . If current revenue exceeds current expenditure, a corresponding rise in the net value of public assets occurs.

Thus the "problem of balancing the budget is concerned primarily with whether, and to what degree, the State (and local authorities) should increase or reduce their total net assets." *

Let us consider first the operating budget in a double budget setup. It is necessary to note at once that under conditions of fairly wide fluctuations in income and employment, such as modern countries undergo, it is virtually impossible to cover even the regular, operating expenditures of the government with adequate tax receipts in the depression years of the cycle. This fact is due to two causes. On the one side, the modern tax system is heavily composed of taxes which are highly sensitive to the cycle. This is especially true of the individual income tax, the corporate income tax, and customs duties. The receipts from these taxes fluctuate widely with the cycle, rising to high levels in boom years and falling to low levels in depression years. On the other side, under modern conditions certain expenditures of government, notably relief of unemployment, unavoidably increase in depression years. Thus, we experience not merely highly fluctuating revenues, correlated directly with the cycle, but also fluctuating expenditures correlated inversely with the cycle. The combined effect of these two diverse movements is to magnify the divergent movement of expenditures and tax receipts. If the tax structure is set sufficiently high so that tax receipts cover the total expenditures over an entire cycle, these diverse movements will produce a surplus of tax receipts over expenditures in the boom years, and a deficiency of tax receipts in relation to expenditures in the depression years.

* Erik Lindahl, *Studies in the Theory of Money and Capital*, London, 1939, pp. 352-53. Professor Lindahl calls attention (p. 354) to the fact that a program of public investment, or a program of debt retirement, financed by a system of stiff progressive taxation would increase the net assets of the state and would imply "some mitigation of the inequality of the present distribution of wealth. This is indeed the crux of the matter. The long-term solution of the problem of public investment is of primary importance for the distribution of wealth."

On the expenditure side many of the regular expenditures will go on from year to year, disturbed but little, if at all, by prosperity or depression. These are the regular expenditures growing out of the ordinary functions of government. But relief expenditures, if not otherwise provided for outside of the budget, must also be regarded in modern times as a normal function of government and one which it must face in every period when unemployment on a large scale prevails. It is an item of expenditure which it is difficult to regularize. But, even here, it is possible to go a considerable distance toward regularization through the development of unemployment insurance and other social security measures. By means of these special measures, the load of outright relief can, in large measure, be provided for outside of the government budget, thereby reducing the magnitude of the fluctuation of expenditures. Thus England, because of a well-developed system of unemployment and old-age insurance, was able to meet the relief needs of the depression with relatively small governmental support. Comparison with our own situation in the Great Depression must, of course, take cognizance of the greater depth of our depression and the correspondingly greater need.

Obviously, the failure to bring about a balance of receipts and expenditures in every single year, yet achieving a cyclical balance, involves deficits in the operating budget in some years and surpluses in others. Thus, temporary loan financing is necessary even in the case of the operating budget. If it is desired to ensure a balanced operating budget over the entire cycle, it is necessary to amortize such loans very rapidly. In order to facilitate this, Sweden has devised a system of amortization within five years of debt incurred to cover temporary deficits in the operating budget. It is possible that a better plan might be to use a varying amortization rate—each successive year carrying a higher and higher rate. Thus, the period of amortization would be longer with respect to deficits incurred in the earlier phase of depression and shorter for later deficits. At all events, in order to insure a

cyclical balance of the operating budget, rapid amortization of such loans would be required.⁴

Some adjustment of tax rates to the cycle movement may be desirable as a compensatory measure. On balance, it may be suggested that taxes which bear heavily on the savings stream may, without damage to the economy, be raised in the boom phase of the cycle. This is true because high rates on incomes flowing largely into savings will simply take funds from the savings stream and, through the debt redemption process, place these same funds back again in the savings stream. This assumes that people owning the retired bonds will wish to reinvest the sums received. Taxes bearing mainly on savings rather than on consumption, and used for debt retirement, would, therefore, have neither an inflationary nor a deflationary effect. Such a procedure would leave the savings stream intact and would be neutral in its effects on the cycle movement.⁵

On the other hand, it might also prove desirable under certain conditions to fluctuate the rates on consumption taxes, raising them in the boom and lowering them in depression. The increase of consumption taxes in the boom will, however, tend to be deflationary in its effect, and should, therefore, be resorted to only in the event that the boom is proceeding at a pace which makes it desirable to hold it in check. In the event that the recovery lacks vigor, an increase in consumption taxes would be unfortunate, since this procedure would tend to dampen the recovery.

⁴ Professor Erik Lindahl, in discussing the new Swedish budget plan, says: "The essential point is that the ordinary or current budget should include only such expenditures as should normally be covered by current revenue (and not by loan or capital assets). A positive or negative difference between current revenue and the corresponding expenditure should be expressly recorded as a surplus or deficit (as suggested above). But these surpluses or deficits are in this plan kept apart from the capital budget and transferred to a special fund, the so-called Budget Equalization Fund." See Lindahl's *Studies in the Theory of Money and Capital*, London, 1939, p. 379.

⁵ The qualification must, of course, be made that diversion of funds through taxation, while it appears to leave aggregates unaffected, may nevertheless affect individual decisions to invest and to save in such a manner as to change the aggregates.

So much for the operating budget, which involves the regular, current expenses. We turn now to the nonrecurring expenditures on major capital projects, whether self-liquidating or not.

Under a fully developed double budget system, the operating budget must include as a part of its regular expenditures the depreciation, amortization, write-offs, and interest charges incidental to the capital outlays accounted for in the capital or investment budget. The interrelation between the operating budget, in a double budget system, and the capital or investment budget can perhaps best be illustrated by reference to the Danish budgetary system.⁶

Denmark's new budgetary system, inaugurated in 1927, offers the most logically consistent example of governmental accounting in the form of two separate but interrelated statements: (a) the Operating Budget, and (b) the Capital or Investment Budget. Every outlay on a capital good is entered in the capital or investment budget. No distinction is made between self-liquidating and non-income-yielding capital outlays. Durability, not profitability, is the criterion applied. Capital outlays on durable or capital goods are financed by (a) inheritance taxes, (b) borrowing, and (c) amortization or depreciation allowances transferred to the capital budget from the operating budget.

Self-liquidating capital projects are, of course, expected to earn an income adequate to cover the operating expenses of

⁶ For an account of the Danish and Swedish budget systems see Brinley Thomas, *Monetary Policy and Crises*, London, 1936; *Fortune* magazine, September, 1938; *Swedish Yearbook*; K. Müller, "Die Neugestaltung des staatlichen Rechnungs und Revisionswesens in Dänemark," *Finanz-Archiv*, 1928, pp. 131-39; G. Myrdal, *Finanspolitikens ekonomiska verkningar*, Stockholm, 1934; P. S. Runcmark, "Den Föreslagna Omläggningen av Rikstatsens Uppställning," *Föredrag Hållna Inför Svenska Ekonomföreningen*, Nummer 2, 1937; "Kungl. maj:ts proposition Nr 225," *Bihang till riksdagens protokoll*, 1937; Nr 199, protokoll, 1938; Erik Lindahl, *Studies in the Theory of Money and Capital*, appendix on "The Problem of Balancing the Budget," London, 1939; "The Financial Policy During Depressions and Booms," *Annals of the American Academy of Political and Social Science*, May, 1938.

the project and interest and depreciation charges. In the event that losses are sustained, these are carried by the operating budget. Non-income-yielding assets, on the other hand, since they earn no income directly, must look to the government's operating budget for income to cover not only expenses of operating, but also interest and depreciation charges. Thus, each branch of the government—for example, a state hospital or a state university—must include in its expenditure estimates not merely the usual operating expenses, but also an amount sufficient to cover interest and depreciation. These expense items entered in the government's operating budget are, of course, defrayed from general tax revenues. Thus, the operating budget carries the interest and depreciation charges originating in the capital or investment budget.

The Danish public accounting procedure is fully developed to include all state properties, and it is, therefore, possible to present annually a statement of the national debt and of the net cost minus depreciation of the national properties. And since a part of the capital outlays are, in fact, financed from inheritance taxes, the net cost minus depreciation of the national properties should exceed the debt obligations. If the ordinary budget shows a balance in any one year, such a balance would show up as a net addition to the assets in the state aggregate asset account; a deficit in the ordinary budget would reduce the net assets. The Danish budget thus illustrates a fully developed capital accounting procedure applied not only to the state's income-yielding assets, but also to public investments which do not yield a monetary income.

Too great significance should, however, not be attached to such an inventory. Indeed, it may well be argued that, at any rate with respect to non-self-liquidating projects, there is no legitimate warrant for setting up a balance sheet of assets against liabilities, since these so-called assets yield no income. The analogy to private business is a false one. The

really important matter, however, with respect to the Danish procedure, is that for every capital outlay financed by borrowing, depreciation or amortization charges are assessed against the operating budget. The operating budget is in balance if its tax receipts are adequate to cover, in addition to expenses of operation, depreciation, amortization, and interest charges. But the initial capital outlay is thrown into a capital or investment budget and is not loaded onto the operating budget.

In the case of Sweden, the capital budget system grew naturally out of the fact that the Swedish state had for many decades past owned important state enterprises, including the railroads, bus lines, telegraph and telephone systems, large electric power plants, and forests, together with such factories and shops as are closely related to the operation of these projects. Thus, the state derived revenue not only from taxes, customs, and excises, but also from the net income from the State Productive Funds, including the Tobacco Monopoly, Iron Ore Company, the Post Office, Telegraphs, Railways, Waterworks, and Public Domains. Capital budgetary accounting also applies to income-yielding projects which are only partially self-sustaining, as, for example, low-cost housing projects. And the new Swedish budget plan proposes to extend the principle, following the Danish example, to nonremunerative public works, such as public buildings. It is proposed to do this piecemeal, if and when separate government agencies or authorities can effectively be set up to manage certain capital projects. As an example, the public roads might be placed under a government authority for the purpose of more efficient management and operating under its own budget. A public roads authority might, of course, have assigned to it a part or all of the gasoline taxes, which would make it in a sense more or less self-sustaining.

The capital or investment budget in Sweden applies, as yet, mainly to remunerative state enterprises. This is the simplest and clearest illustration of the capital budget prin-

ciple. In Denmark, the principle has a more general application.⁷

With respect to our own country, the Swedish principle is particularly applicable to the various governmental corporations and credit agencies and to self-liquidating capital projects. How far, if at all, the capital budget principle could

⁷ In Canada, although not always realized even by Canadians, a budgetary distinction between ordinary and capital expenditures has been made ever since confederation in 1867. The official reports show surpluses in fifty of the sixty-six years following 1867; but if the accounting were made on the United States basis, surpluses would appear in only fifteen of the sixty-six years. Receipts from the federal domain were credited to the "ordinary" budget, and capital expenditures in that field were charged to the "extraordinary" budget. From 1883 to 1914 railway subsidies, which, of course, yielded no return, were charged to the capital account. From 1896 to 1910 military equipment was so charged, and from 1897 to 1911 bounties to iron and steel producers. Thus, developmental expenditures, which however were not self-liquidating such as subsidies to railroads and private industry, and even military expenditures, were charged to the capital account. The financial position of the country, as revealed in the ordinary budget, was often made to appear better than it was. Since 1920, however, although the distinction between ordinary and capital expenditures has been retained, the Finance Ministers have balanced total expenditures against total revenue in their reports. (Cf. J. A. Maxwell, "The Distinction Between Ordinary and Capital Expenditure in Canada," *Bulletin of the National Tax Association*, Volume XIX, no. 5, February, 1934.)

In the case of France, the extraordinary budget was proverbially the dumping place for all expenditures which could not be balanced by tax receipts. France had, moreover, numerous autonomous budgets, but no logical consistency in the budget setup. The match and powder monopolies were handled through the regular budget; but the post office, telegraph, and telephone monopolies, as well as several minor state monopolies, had their own budgets. The tobacco monopoly, which was originally autonomous, since 1927 was managed by the Caisse d'Amortissement, established in 1926 as an autonomous fund with its own bonds, and paying the interest of the Bons de la Défense Nationale. The annexed budgets always appeared balanced, deficits being covered by a sum coming from the general budget, and surpluses being credited to the general budget. Capital expenditures since 1927 were financed in part by Treasury loans and in part from profits on state monopolies. In addition, there were "hidden budgets," such as that for gambling tax receipts. As in the case of Canada, the system seems to have led to underestimation of the true size of deficits. Haig reports that, whereas the official figures show an accumulated deficit of 54 billion francs for the period 1930-37, when extraordinary items are taken into account the figure should be around 70 billions. (R. M. Haig, "The National Budgets of France, 1928-1937," *Proceedings of the Academy of Political Science*, January, 1938, p. 27. See also Professor Haig's *The Public Finances of Post-War France*, pp. 356-64 and 413-14.)

be usefully extended to nonremunerative public works is a matter requiring further study. Before we embark upon any general program of capital budgeting, an exhaustive study should be made of the subject, including time for public education, so that the country would understand and accept as valid the principles involved in the new procedure.

The time is ripe for such an inquiry. We have already been stumbling piecemeal in the direction of a double budget system. Thus, for example, with respect to the Commodity Credit Corporation, its capital stock of \$100 millions is held by the United States. It is authorized to issue its own obligations guaranteed by the United States in an aggregate amount of \$500 millions. Under an Act of Congress, March 8, 1938, the Secretary of the Treasury is required to make an appraisal of all assets and liabilities of the Corporation as of the thirty-first of March in each year for the purpose of determining its net worth. If the net worth is below \$100 millions, the Secretary is required, subject to appropriation of funds therefor, to restore such capital impairment. In the event that the net worth exceeds \$100 millions, the excess must be deposited by the Corporation in the United States Treasury. Thus, the budget of the government is not affected by any debt which the Corporation incurs in pursuit of its loaning operations, but only in the event that a loss or surplus occurs in any given fiscal year.

Other governmental corporations and credit agencies are outside of the government budget in the sense that they are empowered to obtain funds by the sale of their own securities. Such securities are usually fully guaranteed as to principal and interest by the United States. Most of these corporations are making loans or engaging in activities which are expected to be wholly or mainly self-liquidating. In one important case—that of the United States Housing Authority—the loans made to local agencies for low-cost housing are only to a limited extent self-liquidating, since the rents received will not be sufficient to cover interest and amortization charges. The difference is covered by annual federal

subsidies extending over a period of about sixty years, and these subsidies must be carried by the regular government budget.

These developments indicate that we are already moving, but without any systematic program, in some measure in the direction of the capital or investment budget. Yet the capital budget principle finds no recognition in the government's own budget, since we count our investments in the governmental corporations and credit agencies as operating expense, instead of charging them to an investment budget, as would be done in a true double budget system. In view of the tendencies indicated, it would appear that the time has come when a thoroughgoing re-examination of our budgetary procedure is called for.

Double budget accounting requires that the operating budget must carry year-to-year losses or write-offs sustained by governmental corporations or subsidiaries, together with depreciation and interest charges for nonremunerative capital projects accounted for in the capital or investment budget. This procedure has the merit that it helps to ensure a more adequate cost accounting than is likely to be the case when operating and capital expenditures are all lumped indiscriminately into a unitary general budget. Yet it is necessary to point out that there is not *necessarily* any advantage in this respect in the capital budget procedure. Under the unitary budget, accurate accounting for depreciation could equally be provided if one set about doing it. Similarly, a unitary budget could also provide for amortization charges. But, as a matter of fact, amortization of debt incurred from capital outlays has not been made a systematic part of current budget practice.

The double budget method, if it means anything at all, specifically makes provision in the operating budget for depreciation or amortization charges springing from capital outlays accounted for in the capital or investment budget. This has the merit of setting forth clearly what is the true cost of the annual services derived from the capital outlays.

If tax revenues adequate to cover depreciation and interest charges are provided in the operating budget, a true balancing of the budget over the life span of the capital project is achieved. Yet it must certainly be admitted that there is no magic about the double budget. It is all a question as to which mechanism—the unitary budget system or the double budget system—is likely to induce the most effective accounting control.

There is nothing about the capital budget device as such which helps us to determine whether or not a capital project should be financed from current taxes or from borrowing. Whether a country has a unitary budget or a double budget, it will have to decide on grounds of general economic policy which method of financing is, under any given situation, to be preferred. The double budget procedure, by stressing appropriate accounting of capital charges, serves as a helpful guide to policy. The capital project is worth what it costs if the annual benefits derived are at least equal to the depreciation and interest charges in addition to expenses of operation. The double budget procedure stresses the fact that a capital project is not consumed in the year in which it is constructed. It provides a more rational basis upon which the responsible authorities may decide the question whether to finance the construction of a capital project from taxes or from borrowing on the real merits of the case—that is to say, on grounds of appropriate economic policy, taking into account the effect of taxes versus borrowing on the prevailing economic situation. The question will then be decided, among other matters, on the basis of appropriate policy with respect to the prevailing state of employment.

III. Conflicting Views on the Capital Budget

It will be of interest to examine briefly the expressed opinion of American writers on the advisability of setting up “special” budgets. American economists, as Sundelson

has pointed out,⁸ have been less interested in "principles" of budgetary organization than have European students of public finance; but the subject has not been entirely neglected in the American literature. Discussion of federal budgetary principles antedates the introduction of our federal budget by at least a decade. H. C. Adams has a section on "What should be the form of the Budget Statement?" in his *Science of Finance* of 1909. True, the earlier discussion did not deal explicitly with the problem of "special" budgets, and even Professor Willoughby, in his article on Budgets for the *Encyclopedia of Social Sciences*, contents himself with the observation that extraordinary budgets have been passed "to finance war or war preparations or for such elaborate expenditures as were necessitated by the railroad building of European governments."⁹

Since the trend toward reformulation of the budget began in 1932, the problem of "special" budgets has received more attention in American economic literature. If we take three representative texts on public finance—Lutz, Buehler, and Jensen—we find that all three have lengthy sections on the budget, and devote some space to principles of formulation. All three are agreed that a budget should be "comprehensive." Buehler does not state whether this criterion excludes the possibility of "special" budgets. Jensen believes that "eliminating, from the ordinary budget, items of extraordinary character" is a "way of rendering the budget incomplete."¹⁰ There is danger, he argues, that segregation will be regarded as a final solution, or that things will be put into the extraordinary budget that do not belong there. Lutz, on the other hand, suggests a "practical working classification" of expenditures in which the main headings are: Ordinary Government Activities, subdivided into "current" and "cap-

⁸ "Budgetary Principles" in the *Political Science Quarterly* for June, 1935, p. 236.

⁹ *Op. cit.*, Volume 3, p. 39.

¹⁰ Jens P. Jensen, *Government Finance*, Crowell, 1937, p. 514.

ital" outlays; Commercial Enterprises, also divided into "current" and "capital"; Interest; Trust and Other Special Funds; Bookkeeping transactions.¹¹

Sundelson includes in his own list of budgetary "principles" the principle of "unity," which he interprets to exclude "extraordinary, capital, annexed, emergency, special and industrial budgets." It also "requires that no part of the material in the budget system shall be considered as separate or apart from the ordinary finances and accorded a personality of its own." While one can find support for extraordinary budgets in the literature, "nevertheless, merely carrying to their logical conclusion the arguments for disunity will soon bring realization that independent budgets are, at best, dangerous." Disregard of the principle of unity is associated with "shady and doubtful practices, especially regarding the problem of balancing budgets."¹²

This vigorous polemic against extraordinary budgets is somewhat different from that of a paper published by the same author a year earlier, in which, on the whole, he approved of the introduction of an "Emergency Budget" by the federal government.¹³ In its defense, Sundelson had argued that the huge New Deal expenditures were themselves "sufficient justification for their segregation"; other reasons given were that the recovery outlay was not a true government expenditure, since much of it was for self-liquidating construction work; that the emergency items were of a contingent nature and would not be disbursed entirely in one fiscal year; that they required a different sort of control and regulation than the expenditures of the regular departments; that a definite economic philosophy lay behind the expenditures—spending for recovery; that, after all, it is better for the federal government not to show a deficit, since it sets a bad example for the state and local governments. He pointed

¹¹ H. L. Lutz, *Public Finance*, Appleton-Century, 1936, p. 35.

¹² *Op. cit.*, pp. 247-48.

¹³ "The Emergency Budget of the Federal Government," *American Economic Review*, March, 1934.

out, however, some "vices" of extraordinary budgets, but seemed to feel that these vices were not imminent in the American case. Perhaps the lesson is that one may adhere to the principles of "comprehensiveness" even though one abandon the principle of "unity," and that one may be fully aware of the possible "vices" of extraordinary and "special" budgets and still hold that such budgets can be made to serve the cause of clarity and accuracy.

F. R. Fairchild has emphasized the necessity for a clear distinction between revenue receipts and nonrevenue receipts (borrowing), and between governmental cost payments and nongovernmental cost payments (such as repayment of debt and capital expenditures on self-liquidating projects).¹⁴ Equally important, in his view, is the distinction between gross and net debt, the latter being "simply the former reduced by the amount of cash and equivalent assets belonging to the government." He praises the Census Bureau for adopting these accounting concepts as early as 1907, and upbraids the Treasury Department for its failure to recognize the superiority of the Census classifications. The Annual Report of the Secretary for 1934, Fairchild says, fails to show the true revenue receipts, cost payments, and deficit, because it includes trust funds in its account and deals inadequately with the profits of devaluation of the dollar. Moreover, as far as principle is concerned, the deficit is undoubtedly exaggerated by the inclusion of expenditures on investments, such as the loans of the Reconstruction Finance Corporation, which "should be treated as a capital (nongovernmental cost) expenditure after the manner of private business accounting." However, one must be careful to avoid mistakes, such as that made by Willoughby in including among "assets" twelve billions of allied loans that clearly were not going to be repaid; and if expenditures of the R.F.C. or public works expenditures were going to be treated as capital items, reserves for loss and depreciation should be set up.

¹⁴ "An Analysis of the Government's Financial Reports, with Special Reference to the Deficit," *American Economic Review*, March, 1935.

Thus, in 1935, Professor Fairchild seemed favorable toward the concept of a "capital" budget. Three years later, he vigorously attacked the "double" budget system as used by the government; yet this position could, perhaps, be reconciled with his former position, since no consistently logical capital budgeting procedure had, in fact, been set up.¹⁵ "Without any intent to deceive, it can readily be shown that the use of the double budget has tended to obscure the true picture of the national finances." An erroneous impression has been given, he said, that the enormous deficits have been the result entirely of extraordinary expenditures. Moreover, whereas the official figure shows a substantial decline in emergency and relief expenditures since 1934, this result was obtained by a transfer (regarded by Fairchild as unjustified) of half the T.V.A. expenditures to the "general" account in 1936, and all of them in 1937 and 1938, together with the transfer of Emergency Conservation Work to the "general" budget in 1936. A "further distortion" resulted, he believed, from the inclusion of the net receipts of certain recovery loan agencies as a part of current revenues and the use of these funds to defray the expenditures of other agencies. When the proper adjustments were made, it was seen, he held, that the recovery and relief expenditures for 1937 amount to \$3,827 millions instead of the reported \$2,846 millions. Thus, Professor Fairchild accuses the "double" budget system of having underestimated the extraordinary expenditures.

Professor Gerhard Colm¹⁶ points out that budgetary principles are a set of norms for the limitation and supervision of the budget administration. He justifies President Roosevelt's "double" budget on two grounds: (a) estimates concerning emergency expenditures are more uncertain, more subject to revision; and (b) separation promotes administrative thrift and maintains fiscal morale. Contrary to Fairchild, he defends the shift of the Emergency Conservation Work

¹⁵ "The United States Budget in the Past Decade," *Proceedings of the Academy of Political Science*, January, 1938.

¹⁶ "Comment on Extraordinary Budgets," *Social Research*, May, 1938.

(C.C.C.) from recovery and relief to the ordinary budget as "an example of accurate budgeting." Similarly, although the practice of including in the budget only the surplus and deficit of government corporations is a violation of the principle of "completeness," it must be regarded as an important improvement in budgetary procedure. Against the double budget, Colm argues that the line of demarcation is necessarily arbitrary, that it may violate the principle of "publicity," and may lead to a preference for self-liquidating projects which need not be shown in the ordinary budget, even though self-liquidating projects may be less desirable from the welfare point of view. He distinguishes between a "loan" budget, for which the criterion is that the items are financed by borrowing, and a "capital" budget, which involves expenditures on capital projects. The latter can be justified on grounds of administrative requirements. He argues that, whereas current expenditure estimates should be made by the spending department, such procedure for capital outlays leads to "dividing the kitty," each department securing its most pressing needs, even though all the needs of one department may be more important than the most urgent need of another. Colm believes that durability should not be the criterion for capital items. Expenditures on battleships, he thinks, ought not to be entered in the capital budget.

A more exhaustive treatment of special budgets is to be found in A. E. Buck's *The Budget in Governments of Today*. He believes that the experience of American municipalities and the Soviet government with the capital budget prove it to be an effective aid to long-term financial planning, provided the two parts of the budget are presented together. He mentions the unhappy experience of European countries with extraordinary budgets, but is of the opinion that the danger lies in making two distinct and unrelated budgets, and not in the division of a comprehensive budget into two parts. Annexed budgets are most appropriately applied to cases of self-supporting government undertakings or services.

IV. Federal Fiscal Documents

Four major documents, published by the federal government, give information on revenues, expenditures, and debt, actual or prospective: The *Daily Statement* of the United States Treasury, which is the primary source of information on actual receipts and expenditures; *The Budget of the United States*, which contains the President's annual budget message, together with summary and detailed tables; *The Annual Report of the Secretary of the Treasury*, which contains summary tables, charts, and written reports; *The Combined Statement of the Receipts and Expenditures, Balances, etc., of the United States*, which contains highly detailed tables.

Taken together, these documents provide as complete information on government finances as is necessary for most purposes. On the other hand, they are extremely difficult to use for anyone not familiar with their organization. There are discrepancies between the reports, and even within the same report when similar material is covered by different departments. The items one seeks are sometimes found under the most unpromising headings. Some items, like the Shipping Board, have the habit of popping in and out of particular tables from year to year without accompanying explanation. The form of classification is often different in each report for the same year. In short, it takes far more time and patience to discover what really is going on than the general public can be expected to devote to the matter. Standardization, systematization, and simplification are necessary to make these documents useful to the layman.

Let us suppose that a conscientious voter wants to see what expenditures were made on P.W.A. in 1937 and to compare the figure with the projected expenditures for 1938. He goes first to the *Annual Report*, since it is the least terrifying in aspect of the four documents. He turns to the table of "Expenditures" under "Budget Results" but finds no figure on P.W.A. On a wild guess he turns to "Estimates of Expenditures"; he finds here a much longer list of actual expendi-

tures for 1937 than in the "Budget Results" table, including an item for "Administrative Expenses, P.W.A."—but no figure for actual P.W.A. expenditures. Under "Construction Activities" he finds a subhead, "Program under the P.W.A.," but the *Report* gives only a total figure for public buildings under P.W.A., and our conscientious citizen has an idea that there may have been other P.W.A. activities. He resigns himself to tackling the *Combined Statement* and consults the long table of contents. Finding no separate heading for P.W.A., he undertakes the wearisome task of going through the subheads for each department, item by item. As the best bet, he looks up "Procurement Division (including public buildings, Public Works Branch)" under "Treasury Department." In the sixteen pages of entries he finds only one item of less than a half a million dollars that is specifically labeled P.W.A. and—if he is diligent enough to consult all footnotes—two others that are "transferred from P.W.A." If he is not now utterly discouraged, he will find P.W.A. items under "Indian Affairs" of the Department of the Interior, Federal Emergency Administration of Public Works, "Nonmilitary activities" of the War Department, etc., which he is not certain how to classify. After these experiences, it is highly unlikely that our citizen is still conscientious enough to look at *The Budget* to see what appropriations have been made for P.W.A. for 1938. Under "General Public Works Program" he will find items of \$2.00 for communications expenses, but he is not told whether or not all the twenty-one pages of items represent P.W.A. expenditures. From this single example, it should be clear that these documents in their present form cannot be regarded as a medium for informing the electorate of the government's finances.

After these disconcerting experiences, the inquiring citizen would be forced to recognize that his apparently simple query was in reality a research problem, and, if he had the time and the patience, he would tackle it as such. The research would begin with the various pieces of legislation creating the P.W.A. and providing the different appropriations which have fi-

nanced its operations; it would lead through the statements made by that agency's officials in the course of hearings before the Congressional appropriation committees; and in all probability it would not end before the inquiring citizen had had some direct correspondence with the agency itself.

In the course of the search, it would be discovered that P.W.A. had originally been created with some very broad powers, including powers to make grants to other federal agencies, to make loans to railroads, and to make loans and grants to states, cities, and other units of government, and that by fiscal 1938 these powers had become restricted to the making of loans and grants to nonfederal units of government. It would be discovered that P.W.A., except for its own administration, spent no money itself, that it merely made loans and grants to be spent, under general P.W.A. supervision, by others. It would be discovered that, with respect to loans, the P.W.A. had functioned as a kind of quasi-investment banker for railroad and municipal issues, intermediate between the borrower and the capital market, and that this relationship had been complicated by the interposition of the R.F.C. between the P.W.A. and private purchasers of securities. Armed with this information, it would be possible to go to the appropriate items in the *Daily Statement*, and ascertain the volume of P.W.A.'s financial operations.

Despite the lack of standardization of expenditure classification in the government reports, one can discern a tendency toward the development of "special" budgets of the "extraordinary" type. The first step was taken in the Hoover Administration in the establishment of the Reconstruction Finance Corporation. Here was a government agency organized to meet an emergency, financed by a subscription to its capital stock of half a billion dollars out of the "General Fund."¹⁷ In that year no special budget was set up for the R.F.C.; there is no report of its expenditures until 1933. But the very formation of a government-financed emergency corporation, authorized to make loans and undertake expenditures, was

¹⁷ Cf. *Combined Statement*.

the first of several emergency measures which led directly to the President's recent demand for a separate budget classification. Clearly, the subscription to the capital stock of the R.F.C. represented an expenditure of an entirely different sort from administrative expenses, relief payments, or even public works. For presumably the capital subscriptions would provide the basis for investment in assets with a marketable value, and was, therefore, in some sense "balanced" by an acquisition of assets. The same is true of the subscription of \$125 millions to the stock of the Federal Land Banks in the same year.¹⁸

The *Combined Statement* shows no changes in 1932 other than the addition of the subscriptions to the stock of the R.F.C. and the Federal Land Banks to the list of "other" (as opposed to "general") expenditures. The *Budget*, which previously had divided expenditures into "Ordinary" and "Reduction in Principal of the Public Debt Required to be Paid from Ordinary Receipts," divided them for the fiscal year 1932 into "General," "Special," and "Trust Funds." This division was not made according to departments; nearly every department had some items in all three categories. "Special" items consisted of such expenditures as the "Memorial to Women of the World War" under the heading "Legislative Establishment," and "Federal Reserve Board" under "Independent Establishments." Trust funds, which are funds held for particular groups or individuals, included items such as "Proceeds from Sale of Indian Lands."

In 1933 the form of the "budget results" table in the *Annual Report* was significantly changed. Whereas in previous years expenditures had been divided into two broad classes, "general" and "other," in 1933 there was an additional classification: "Major expenditures due to or particularly affected by the depression." Under this heading appeared the

¹⁸ In the written report of the *Annual Report of the Secretary of the Treasury* for 1932 (p. 17), these two subscriptions to capital stock are described as "emergency" expenditures; but this term does not appear in the formal tabular statement of expenditures.

following items: Reconstruction Finance Corporation, Public Works, Special Aids to Agriculture, Distribution of Wheat and Cotton for Relief, Emergency Conservation Work (which latter became the C.C.C.), and Postal Deficiency. This classification is significant because it indicates a recognition by federal finance authorities that there are some sorts of expenditure that cannot properly be described as "ordinary," and which need some special kind of treatment.

In the text of the *Report*,¹⁹ the new method of classification is explained in the following manner: "Expenditures for 1933 and prior fiscal years cannot be completely classified as between general and emergency outlays—a classification which was introduced into the Daily Treasury Statement on July 1, 1933. There is presented on page 7, however, a comparison of expenditures of the fiscal years 1932 and 1933, classified by major functional groups. In this table major items due to or particularly affected by the depression are shown separately."

The form of the *Budget* for the fiscal year 1933 (presented January 3, 1932) was the same as for the previous year. The *Combined Statement* showed no change except that four new "Independent Offices" were added and accounted for, namely, National Industrial Recovery, Emergency Conservation Work, National Banking Emergency Act, and Federal Home Loan Bank Board.

The "Federal Home Loan Bank Board" makes its first appearance in the *Budget* in 1934 (presented January, 1933), appearing under "Independent Establishments, Group I." The Reconstruction Finance Corporation also makes its first appearance under "Independent Establishments, Group II." The difference between these two groups is not explained. Most independent establishments are in Group I. One cannot conclude that Group II is regarded as the "emergency" group, since it includes the Shipping Board, Veterans' Administration, and the Federal Farm Board. Subscriptions to stock of Federal Land Banks are not shown under the same head-

¹⁹ *Annual Report of the Secretary of the Treasury*, 1933, p. 5.

ing as subscriptions to stock of R.F.C., but under "Treasury Department, General Fund." About all that can be concluded from these revisions is that the Budget division at the beginning of 1933 was already feeling some need for reclassification of expenditures.

In the *Combined Statement* the only changes introduced in 1934 were the addition of a large number of new Independent Offices²⁰ and renaming the "Office of the Supervising Architect," which appeared under the Treasury Department, "Procurement Division, including public works, Public Works Branch."

A more important change was made in the *Annual Report*. The heading "Expenditures Due to or Particularly Affected by the Depression" gave way to the heading "Emergency and Other Expenditures."

Under the Roosevelt regime the trend toward setting up special budgets was considerably accelerated. In his first Budget Message—that for 1935, presented January 3, 1934—he tacitly accepted the principle of a balanced "regular" budget, which is made to balance by setting up an "extraordinary" budget for emergency expenditures. He emphasized the fact that, with the exception of debt retirement, the budget estimates for the fiscal year 1935 show a small surplus, but that this budget "does not include any additional expenditure for extraordinary purposes."²¹ By making this distinction between the regular and the extraordinary budget, he sought to reconcile his election promise of balanced budgets with the expansion of those expenditures which, it was deemed, relief or recovery made necessary.

Roosevelt's distinction between "General" and "Emer-

²⁰ Viz.: Commodity Credit Corp., Electric Home and Farm Authority, Executive Council, Export-Import Banks, Fed. Alcohol Control Board, Fed. Board of Vocational Education, Fed. Civil Works Administration, Fed. Co-ordinator of Transportation, Fed. Deposit Insurance Corp., Fed. Emergency Housing Corp., Fed. Emergency Relief Admin., National Emergency Council, Fed. Savings and Loan Ass'n., Federal Surplus Relief Corp., National Industrial Recovery Admin., National Planning Board.

²¹ *Budget, 1935*, pp. vi-viii.

gency" expenditures was carried into the *Budget* statement for 1935, in much the same manner as in the *Annual Report* for 1934. Under the heading "General," many items, not previously classified in that manner in the Budget statements, appear: Public Building Construction and Sites, River and Harbor Work, Agricultural Adjustment Administration, Farm Credit Administration, Agricultural Marketing Fund, Distribution of Wheat and Cotton for Relief, Subscription to the Stock of the Federal Land Banks, Interest on the Public Debt, Public Debt Retirements. From this list it is clear that the double budget was still a long way from being a "current" and "capital" budget, or even an ordinary and a "loan" budget.

In 1935 the *Combined Statement* adopted the classification introduced into the *Annual Report* of the previous year; expenditures are divided into "General" and "Emergency." The list of "emergency" expenditures is the same as in the 1934 *Annual Report*, except for the following additions: "Resettlement Administration" and "Chargeable against increment on gold: Melting losses, Payment to Federal Reserve Banks for retirement of national bank notes." Several new Independent Offices were added to the contents.²²

By 1935, however, the form of the "budget results" table in the *Annual Report* had changed again. The main divisions were "General" and "Recovery and Relief" expenditures. Under the latter head is one main subhead: Federal Public Works Projects. The public works are redivided into two parts: nonrepayable and repayable. This distinction is still another step toward the accurate budgetary procedure. The "repayable" items include the Boulder Dam and other Reclamation Projects; Loans to the Commodity Credit Corporation, to the Joint Stock Land Banks, and Crop and Feed Loans; Public Works Administration; and Subscriptions to

²² Viz.: Emergency Relief Appropriation Act, Railroad Retirement Board, Resettlement Administration, Rural Electrification Administration, Securities and Exchange Commission, Tennessee Valley Authority, Works Progress Administration. P.W.A. is not listed as a separate category, but appears under "Procurement Division" of the Treasury Department and other headings.

Capital Stock.²³ There is implied in the form of this table an argument that expenditures on income-yielding assets and on recoverable loans ought to be regarded differently from expenditures of other sorts.

This form of presentation of expenditures was adopted by President Roosevelt in his 1936 Budget Message (January 3, 1935). Still clinging to the principle of a balanced ordinary budget, the President pointed out that for the fiscal year 1934 "general receipts . . . approximately equalled the regular expenditures for the year, a fact which should be duly recognized," and noted that the 1936 estimates balanced "except for expenditure to give work to the unemployed." In this same Message attention is drawn to an important budget "reform." Henceforth, self-supporting or self-contained government units were to have their own separate and annexed budgets. There would also be a General Budget Summary, which would show surpluses or deficits from the annexed budgets in addition to the other items. Here we have the adoption of what is essentially the French system of annexed budgets for government corporations. In 1936 the departments so distinguished were the Post Office Department, the Reconstruction Finance Corporation,²⁴ the Tennessee Valley Authority, and the District of Columbia.

The *Budget* for 1936 divided expenditures into eight main divisions: I. Legislative, Judicial, and Executive; II. Civil Departments and Agencies; III. National Defense; IV. Veterans' Administration; V. Debt Charges; VI. Refunds; VII.

²³ These subscriptions included: Regional Agricultural Credit Corporations (1934), Federal Farm Mortgage Corporations (1934), Federal Intermediate Credit Banks (1935), Federal Land Banks, Home Loan Banks, Home Owners' Loan Corporation, Federal Savings and Loan Associations, Federal Deposit Insurance Corporation.

²⁴ The R.F.C. budget is subdivided in turn into a Summary Statement and "supporting statements" of the subsidiary organizations through which the R.F.C. operates. These included, in 1936, the Commodity Credit Corporation, the Export-Import Banks of Washington, the Federal Farm Mortgage Corporation, the Federal Home Loan Banks, Federal Housing Administration, Home Owners' Loan Corporation, and the Regional Agricultural Credit Corporation.

Recovery and Relief; VIII. Supplemental Items. Under Recovery and Relief the divisions were: (1) Agricultural Aid; (2) Relief; (3) Public Works; (4) Aid to Home Owners; (5) Miscellaneous; (6) Reconstruction Finance Corporation (from annexed budget); (7) Tennessee Valley Authority (from annexed budget).²⁵

The reports of actual expenditures (*Annual Report* and *Combined Statement*) show little change in 1936. The items "Railroad Retirement Act," "Soil Conservation and Domestic Allotment Act," and "Social Security Act" were added to the list of "General" expenditures, and the debated transfer of Emergency Conservation Work to the "General" category from "Recovery and Relief" was made.

In his Budget Message for 1937 (January 3, 1936) Roosevelt reiterated his distinction between a balanced regular budget and an emergency budget. "In looking at the revised estimates for the fiscal year 1936 I am more than pleased to find that we have not only accomplished what I said we would in my Budget Message a year ago but that the results with respect to both expenditures and receipts have surpassed expectations." He included in the category of "regular activities," as opposed to "recovery and relief," "major public works, operations of the C.C.C., and agricultural benefit payments." He also announced that twenty emergency agencies had been brought under the administration of the Director of the Budget. In the *Budget* itself no significant

²⁵ The *Budget* for 1936 carries with it a "Supporting Schedule No. 3, Part III," in which is presented "Moneys for Recovery and Relief Classified as to Provisions for Repayment." Its outline is as follows: I. Nonrepayable, 1. Grants, aids and expenses: F.E.R.A.; C.W.A.; Emergency Conservation Work; Dept. of Agric. drought relief; P.W.A.; Surplus Relief Corp.; A.A.A.; Land Banks; R.F.C.; Regional Agric. Credit Corps.; Adm. for Industrial Recovery, 2. Federal public works projects; T.V.A.; Public highways; Boulder Canyon; Rivers and Harbors; Other; (Departmental). II. Loans: Comm. Credit Corp.; Joint Stock Land Banks; Crop and feed loans; P.W.A.; Emerg. housing; F.H.A.; Subs. homesteads; R.F.C.; Export-Import Banks. III. Subscriptions to capital stock, etc.: Production Credit Corps.; Banks for co-ops.; Regional agric. credit corps.; Fed. Farm Mtge Corp.; Fed. Interim. Credit Banks; Fed. Land Banks; Home Loan Banks; Home Owners' Loan Corp.; Fed. Savings and Loan Assns.; F.D.I.C. IV. Unallotted funds (by P.W.A.).

changes were made in 1937. In accordance with the reports of actual expenditure for 1936, the *Budget* for 1937 shifted the Emergency Conservation Work, under the heading Civilian Conservation Corps, from Recovery and Relief to the "General" category. The Boulder Canyon Project was taken out of the "Federal Public Works" division of the nonrepayable recovery and relief expenditures and entered under "Civil Departments and Agencies."

The "budget results" table in the *Annual Report* for 1937 divides expenditures into "Regular operating expenditures," "Public Works," and "Relief"—each with subdivisions; Loans, Subscriptions to Stock and Surplus, Agricultural Adjustment program, Social Security, Railroad Retirement, and Debt Retirement. A more significant classification makes its appearance in the "Estimates of Expenditures" table, which includes a report of actual expenditures for 1937. Under "General and Special Accounts" appear: I. General, II. Recovery and Relief, III. Revolving Funds, IV. Transfers to Trust Accounts (including for the first time the Old Age Reserve Account), V. Debt Retirements. "Trust Accounts, Increment on Gold, etc." are listed under that heading. As will be seen below, the 1939 budget organization is really an elaboration of this kind of formulation.

In the 1938 *Budget*, the "General Public Works Program" is eliminated from the "Civil Departments and Agencies" category and made a main division of its own, along with "Legislative," "Recovery and Relief," etc. "Social Security" is added as a main subdivision. The Federal Deposit Insurance Corporation follows the C.C.C. and Boulder Dam from "Recovery and Relief" to the regular division, under "Legislative and Executive." The Federal Surplus Commodities Corporation was added to the list of nonrepayable recovery and relief expenditures, while the Surplus Relief Corporation, Emergency Conservation Work, and Agricultural Adjustment program no longer appear there.

In his Budget Message for 1939, the President came out more definitely for a reclassification of expenditures. He di-

vided expenditures into four major types: (1) Fixed charges that cannot be reduced by Executive action, e. g., interest on public debt, pensions, contributions to Old Age reserves, etc.; (2) Everyday operations of government that do not afford opportunity for large reductions, e. g., State Department salaries of diplomats, consuls, etc.; (3) "The major effort of the Government to help the economic security of large groups of citizens. . . ." Aids to save farms and homes from foreclosure, relief for unemployed, old-age pensions, etc.; (4) "The final category includes items of public expenditure for capital improvements—such as new highways, new river and harbor projects . . .," etc.²⁶

In his Budget Message for 1940, issued on January 3, 1939, President Roosevelt brought the issue of the capital budget specifically to the fore. He divided federal expenditures into "ordinary" and "extraordinary." The former relate to the "operating expenditures for the normal and continuing functions of government." "The ordinary expenses," said the President, "should be met out of current revenues." And he expressed the hope that in times of prosperity current revenues would so far exceed ordinary expenditures as to produce a "surplus that can be applied against the public debt that the Government must incur in lean years because of extraordinary demands upon it."

The extraordinary expenditures, which are concerned with loans, capital outlays, and relief of need, he deemed to be sufficiently flexible in character as to permit their contraction and expansion as a "partial offset for the rise and fall

²⁶ The general form of the 1939 *Budget* is unchanged. Among changes in the details, however, were the following: The Commodity Credit Corporation and the Farm Credit Assn. were eliminated from Recovery and Relief, and the Federal Farm Mortgage Corp., the Farm Security Corp., Administrative Expense, Boulder Canyon, Grants to States, Loans to Railroads, and the Resettlement Administration were added. The Commodity Credit Corp., Farm Credit Administration, Loans and Grants to States, Loans to Railroads, Export-Import Banks, and the R.F.C. were added to the Revolving Funds Account. The Old Age Reserve Account, Railroad Retirement Account, Adjusted Service Certificate Fund, Government Employees' Retirement Funds were placed in a new section called "Transfers to Trust Accounts."

in the national income." In this manner they "deal more particularly with the relationship between fiscal policy and the economic welfare of the country." Presumably, in periods of prosperity, these extraordinary expenditures could be greatly reduced. The current revenues, augmented by a rising taxable income, could be expected to yield a surplus which would be applied to debt retirement. The President's Message presupposed not merely highly fluctuating current revenues correlated directly with the business cycle, but also a highly fluctuating volume of extraordinary expenditures correlated inversely with the cycle.

This portion of the Message did not make it definitely clear whether it was expected that the surplus of current revenues during prosperous years shall be adequate to retire all the debt incurred by reason of the extraordinary expenditures made in depression years, or only a part of the debt so incurred. But other portions of the Message would indicate that the latter was intended. Reference was made to "criticism of the Government's practice of including in its budgetary expenditures amounts disbursed for loans or for self-liquidating projects or for other extraordinary capital outlays which increase the wealth of the nation." A change in the method of financing self-sustaining governmental corporations and credit agencies was recommended. An annual appraisal of the assets and liabilities of these corporations or agencies should be made and "any surplus from operations or impairment of capital resulting from losses" should be reflected as receipts or expenditures in the annual Government *Budget*. Thus "the *Budget* would be affected, not when the investment or loan is made, but in the fiscal year when the surplus or loss occurs." Capital expenditures made by these agencies would not result in an increase in the direct government debt. Moreover, it was recommended that the capital outlays incurred on self-liquidating public projects, like Boulder Dam, should likewise not be included in the annual budgetary expenditures. Such expenditures should be capitalized and should occupy a separate category in bud-

getary reporting. The implication clearly was that for self-liquidating capital outlays of this character a capital budget should be set up, separate and distinct from the extraordinary budget. Thus, in effect, it was suggested that four types of budget be created as follows:

- I. Ordinary Budget
- II. Extraordinary Budget
- III. Capital Budget (including self-liquidating Public Projects and investment in government corporations and agencies)
- IV. Annexed Budgets (for government corporations and agencies)

The implication was that both the ordinary and the extraordinary budgets should be financed over an entire cycle from current revenues, though not necessarily in each year in the cycle; and that the capital budget was to be financed by borrowing. According to this theory, the public debt might be permitted to rise *pari passu* with a rise in income-earning assets. Such increase in debt could be expected to liquidate itself over time and would represent no draft on the taxable wealth or income of the community.

The President's Message, however, went a bit farther, but how far is not definitely clear. He did say that our financial statements "should clearly reflect, in appropriate classifications, the amount of government outlays for physical improvements that are not self-liquidating in character." There followed a table which set over against the rise in the public debt during the decade 1931-40 the federal outlays for durable improvements and recoverable loans and investments. Recoverable loans and investments constituted, however, only 3.3 billions of dollars out of the total so expended. It is clear, therefore, that, in so far as the public debt had risen by reason of capital outlays, 80 per cent was due to expenditures on non-self-liquidating projects.

It is with respect to the rise in the public debt incident to these outlays that intelligent debate begins. The President did not commit himself. He suggested that a catalogue of

such outlays at least helps to appraise the economic significance of our rising public debt. With respect to these outlays, at any rate, the money had not been thrown "out of the window or into the sea." The President insisted that we have been "buying real values with it." But he did not commit himself to the thesis that the public debt may properly rise commensurate with the growth of this type of public wealth. Indeed, he emphatically asserted that he was not suggesting "an ordinary budget which is always balanced and an extraordinary budget which is always unbalanced." Not only should the ordinary budget at all times be met from current revenues, but in good times any extraordinary expenditures which it was deemed necessary to make should, according to the Message, be met from taxes, and, in addition, a surplus should be produced in order to retire some of the debt incurred during depression. It is not clear, however, that the President advocated a complete balancing of ordinary and extraordinary expenditures over the cycle period, even after self-liquidating capital expenditures and governmental corporation outlays had been deducted from the "extraordinary" expenditure category. What can definitely be said is that he envisaged that extraordinary expenditures on non-self-liquidating public works and on unemployment relief shall, over the cycle, be met *in part* from current revenues.

Over the entire decade 1931-40, according to the President's table, total ordinary expenditures amounted to \$40,515 millions and total current revenues to \$41,033 millions. Except for the fiscal years 1932, 1933, and 1936, current revenues exceeded ordinary expenditures. But, for the entire decade, current revenues contributed only half a billion dollars to the total extraordinary expenditures of \$27,797 millions. Of this total, \$16,231 millions was for unemployment relief, \$7,952 millions for public works, and \$3,339 millions for loans and subscriptions to stock, etc. The unemployment relief total, however, included an estimated \$2,687 millions of durable improvements constructed by the W.P.A. If this be added to the public works, loans, and stock subscription

items, we get a total of \$13,978 millions for public works and investments. There remains the almost exactly equal figure of \$13,544 millions for unemployment relief expenditures of a sort which have left no material assets behind. According to these estimates, we have "something to show" for one half of the extraordinary expenditures; the rest went to relieve distress but added nothing to the public wealth.

In view of the stress laid on durable assets, it is important to note that the mere accumulation of tangible wealth is not an adequate criterion of the economic justification of public expenditures. Expenditures on public health and education may be more valuable than the construction of durable projects.

The trend toward reorganization of the federal budget to take account more adequately of the distinction between general expenditures and "special" expenditures of one sort or another has existed throughout most of the depression period, and the President's 1940 Budget Message represented a culmination of this trend. The time has now been reached when there should be undertaken a systematic budget reform.

Part Three

FISCAL POLICY AND FULL USE
OF RESOURCES

Chapter XI

THE CYCLICAL CONSUMPTION- INCOME PATTERN

ONCE a revival is started, a cumulative process begins in which investment and consumption interact upon and stimulate one another—the first increment of investment induces an increase in consumption and this, in turn, induces further investment. This cumulative process, however, unless continually reinforced by spontaneous or independent investment, is likely to peter out rather quickly. This follows from the fact that a considerable part of the new income generated by investment is not used for consumption. Thus, the induced consumption expenditures tend continually to run down, and so, in turn, the induced investment slows up until the whole process comes to a standstill and thereafter rapidly develops into a cumulative downturn. The cumulative downward process similarly comes to a halt because, with lower incomes, consumption falls less rapidly than income and so offers an increasing resistance to a further decline.

The cumulative process, therefore, does not offer a valid theoretical basis upon which to predicate either a continued upward movement or a continued downward spiral. And it is equally precarious to pin one's faith upon the cumulative process to produce a sustained recovery. The recovery is not likely to reach any very high level, nor to be maintained for any considerable period of time, without the injection of a continuous flow of spontaneous or independent investment.

It is true that expenditures on durable consumers' goods

(especially automobiles) not only help to initiate an upturn, but also help to sustain the recovery as long as investment outlays are sufficiently large to maintain income at a high level. But there is not likely to be any important decline in the consumption of durables or of consumption in general until a decline in income has already set in. Whenever investment falls off, however, employment and income decline, and the decline in income is likely to bring about quickly a sharp reduction in the purchase of durable consumers' goods and more gradually a decline in consumption in general.

Thus, we must look to the continued flow of investment expenditures to sustain prosperity. Whenever this stops, income falls off, not only by the amount of the decline in investment expenditures, but also by reason of the induced decline in consumption. While consumption and investment both play a role in initiating recovery and in the cumulative process, it is peculiarly spontaneous or anticipatory investment which must carry on if a high level of income and employment is to be maintained. In the absence of governmental support, on a scale hitherto not realized, booms inevitably die sooner or later a natural death, because the investment flow dries up. It dries up because, after some years of large capital outlays, investment opportunities become temporarily exhausted.

A society so constituted that its consumption habitually falls, by a considerable percentage, below its income at reasonably full employment levels requires a large continued flow of new investment to keep it going at full activity. Thus, it is important not merely to inquire into a country's investment opportunities, and how fully these have already been satisfied, but also what proportion of its income is customarily consumed. The relation of consumption to income is apparently a highly stable function and certainly one of the most important in the whole field of economics.

The Consumption Function

A schedule giving the amount of consumption at various income levels is precisely analogous to the ordinary demand schedules for commodities. The consumption-income schedule and the ordinary demand schedule both show the functional relation between two variables, the former the relation of consumption to income, and the latter the relation of the amount demanded to price. The functional relation of consumption to income may be designated briefly by the phrase "the consumption function."

The relationship of percentage changes in demand to percentage changes in price may be described by the phrase "price elasticity of demand," while the relationship of consumption to income may be described by the phrase "income elasticity of consumption." A commodity demand schedule may, of course, also be set up in terms of the relation of quantity taken to income. The shape of such a derived curve may be described as the "income elasticity of demand" for a particular commodity. A summation or aggregate of all such individual commodity demand schedules for consumption goods of all sorts would, of course, give us the aggregate income-consumption schedule, which we are here discussing.

The income elasticity of consumption is a property or characteristic of the consumption function. Other properties of the consumption function are as follows: (1) the marginal propensity to consume and (2) the average propensity to consume.

The marginal propensity to consume may be defined as the percentage of an additional increment of income which the public wishes to consume; it may be designated as follows: $\frac{\Delta C}{\Delta Y}$, in which C is consumption and Y is income. The average propensity to consume may be defined as the proportion of any given aggregate income which the public wishes to consume; it is the ratio of consumption to income at any given income level and may be designated as follows: $\frac{C}{Y}$.

Both the marginal propensity to consume and the average propensity to consume may, of course, vary (as is also true of elasticity) at different income levels. But they need not both change in the same direction. Indeed, the average propensity to consume may, for example, increase steadily as income falls, while the marginal propensity to consume might remain constant at all income levels. This is illustrated in the table and chart on page 229.

Keynes' "propensity to consume" is merely another term for the consumption-income schedule or the consumption function. Keynes' terminology is perhaps more likely to be misunderstood, especially by the nontechnical reader, who is likely to conclude that "propensity to consume" means merely a *desire* to consume. On the contrary, it represents something quite specific with respect to *action*. The "propensity-to-consume" schedule indicates precisely the action which the public is prepared to take with respect to consumption purchases at various income levels, just as the demand schedule for individual commodities indicates the amount of the commodity which the public is prepared to buy at various prices. At times, the phrase "propensity to consume" is a peculiarly convenient expression to use, but more often the phrases "consumption-income schedule," or, more briefly, "consumption function," will be used in this book.

With respect to both the demand function and the consumption function, it is, of course, true that they are hypothetical in the respect that the amount which will be demanded in the former case, or the amount which will be expended on consumption in the latter case, is dependent upon a single variable—price in the former instance and income in the latter. It is assumed that everything else, not inherently connected with the change in price in the one case or the change in income in the other, remains constant. Thus, with respect to the demand curve, it is assumed that the tastes and relative preferences of consumers for different commodities remain unaltered; and, with respect to the consumption-income curve, it is assumed that the thriftiness

A = Consumption Function with respect to which both the marginal propensity to consume and the average propensity to consume are unity at all income levels.

B = Consumption Function with respect to which the marginal propensity to consume and the average propensity to consume are as given in the following table:

	$\frac{C}{Y}$	$\frac{\Delta C}{\Delta Y}$
56	1.036	0.667
62	1.000	0.667
68	0.971	0.667
80	0.925	0.667

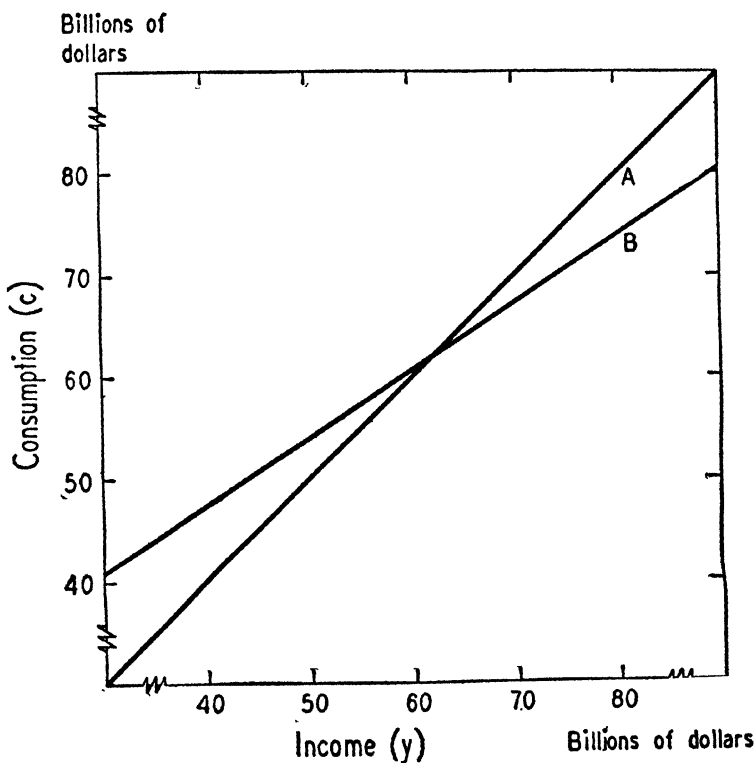


Chart 10.

of the people remains unaltered. A shift in the demand curve from left to right, for example, represents a genuine change in demand in the respect that the preferences for different types of commodities have been fundamentally changed, and similarly a shift in the consumption-income curve indicates a change in the thriftiness of the community. Thus, with a decrease in thriftiness the consumption-income curve would shift upward precisely as an increase in the demand for a specific commodity would be represented by an upward shift in the whole demand curve.

The curve, or schedule, represents the relation of one variable to the other in a "period" within which all other variables are assumed to remain constant. Thus, the consumption-income schedule, or the consumption function, represents only one single relationship—changes in consumption as income changes. Hypothetical schedules of this character are, of course, heroic abstractions. They are unrealistic in the respect that they seek to isolate from the multitude of factors which are constantly changing in a highly dynamic world a single variable which is regarded as a significant determinant in order to measure the influence of this variable upon the dependent variable. Perhaps the best illustration of such a hypothetical schedule, in so far as the consumption function is concerned, would be one purporting to show the different amounts which a given individual with certain definite, unchanging psychological attitudes would expend on consumption goods in the event that his income should change. In point of fact, of course, as his income changes, other things change also, including his psychological attitudes. A severely heroic abstraction which precludes all such changes in psychological attitudes may frequently be very useful in economic analysis, even though it is somewhat unrealistic.

Statistical Studies of Consumption

A statistical analysis more realistic, though less rigorous in its logic, might proceed on the following assumptions: that

human beings, in general, are fundamentally alike when viewed in rather large statistical aggregates; that, therefore, the expenditures on consumption goods by individuals with an income of one thousand dollars represent, in some sense, a typical behavior; and, similarly, the expenditures of an appropriate sample of individuals with an income of \$1,500, \$2,000, \$2,500, etc., may be regarded as typical. The assumption may, moreover, be made that a typical individual who expends a certain amount on consumption goods when his income is \$1,000 would, if his income were increased to \$1,500, \$2,000, \$2,500, etc., expend on consumption goods the amount which individuals in those groups typically spend. This involves, of course, the assumption that the typical individuals at the various income levels are fundamentally alike and differ in their behavior only by reason of the differences in their incomes.

An illustration of this type of statistical analysis may be found in the report of the National Resources Planning Board on Consumer Expenditures in the United States.¹ From the budgets examined it is possible to prepare a schedule showing the amounts consumed by different income classes, as is done in Table XX on page 232.

On the basis of such a table, a schedule can be constructed showing the consumption of society as a whole at various hypothetical income levels. Imagine that the income of each group suddenly rose to a higher level. The individuals of each group would now react in their consumption expenditures, it is assumed, according to the consumption-income schedules statistically ascertained in the actual budget studies. Thus, in the event that the one-thousand-dollar income class should experience a jump in income to the fifteen-thousand-dollar class, they would presumably react in their consumption expenditures just as the fifteen-thousand-dollar income class had in fact reacted, according to the inquiries made. On this assumption, a table was calculated giving the consump-

¹ National Resources Planning Board, *Consumer Expenditures in the United States*, U.S. Government Printing Office, 1939.

TABLE XX

<i>Income Head</i>	<i>Consumption as Per Cent of Income</i>
Under \$500	149.4
\$500-750	112.8
\$750-1,000	104.6
\$1,000-1,250	100.6
\$1,250-1,500	99.0
\$1,500-1,750	96.5
\$1,750-2,000	95.0
\$2,000-2,500	91.8
\$2,500-3,000	88.4
\$3,000-4,000	84.4
\$4,000-5,000	79.4
\$5,000-10,000	70.5
\$10,000-15,000	61.1
\$15,000-20,000	60.1
\$20,000 and over	49.3

Derived from National Resources Committee, *Consumer Expenditures in the United States*, 1939, p. 20.

tion for the economy as a whole at varying total income levels, ranging from \$60 billions to \$80 billions. This schedule is given in Table XXI.

TABLE XXI

<i>National Income (billions)</i>	<i>Consumption as Per Cent of Income</i>
\$50.0	93.1
60.0	89.8
70.0	87.2
80.0	85.1

Table derived from National Resources Committee -*Consumer Expenditures in the United States*, 1939, p. 167.

What realistic interpretation might be made of such a table? Let us suppose that the national income will, in fact,

rise by \$10 billions per decade over the next half century. By the aid of such tables, would it be reasonable to assume that one could determine approximately the amount of consumption decade after decade from such a consumption-income schedule as the kind referred to above? Obviously, such a conclusion would be unwarranted. Were the schedule in question applied to such data, it would appear that, as the national income rose decade by decade, a smaller and smaller percentage of the total income would be consumed and a larger and larger percentage saved. Now we know in general, from past experience, that this has not happened. We know that, as incomes in all groups have risen, changes in the standard of living have forced upward the minimum consumption requirements, so that always the lower income groups, despite the fact that their incomes were much higher than fifty or one hundred years ago, still consumed all or even more than all of their incomes, their incomes being often supplemented by gifts and by borrowing. Historically, it appears probable—though the data are certainly inconclusive—that as the national income has risen secularly from decade to decade, approximately the same proportion of the income has been consumed.² This appears to be true for the United States down to the present time and for England, at any rate until the time of the first World War. Fundamental institutional changes may, of course, alter this relationship, but there is no conclusive evidence that, with the long-run secular rise in per capita income, any substantial increase has occurred in the relative proportion of the total income consumed and saved.

It appears evident, therefore, that the typical consumption-income schedule (which shows a tendency for the ratio of consumption to income to fall as income rises) does not hold for the long-run secular change in real income. The relation indicated holds only when large changes in income occur

² Preliminary estimates by S. S. Kuznets of capital formation in the United States during the past six decades, soon to be published, support this conclusion.

within a relatively short period of time. Now, in point of fact, this is precisely what happens in the violent fluctuations of income in the business cycle.

The fluctuations in consumption relative to income in the various phases of the cycle follow a more or less definite cycle pattern. The volume of consumption is determined not merely by the size of the income, but also, in part, by the particular stage in the cycle at which this income is received. Thus, the consumption is, within the cycle period, a function not merely of the size of the income, but also, to some extent, of the particular phase of the cycle in which the income occurs. Moreover, the cyclical changes in income occur for each income group. Each group experiences marked changes in income within the cycle period. The change in aggregate consumption springs from changes in the income received by all of the various income groups. This, however, is something very different from the differential consumption behavior of different income groups at any one point of time. For all these reasons, it cannot be assumed that schedules derived from the amount consumed by various income groups at any one period—for example, 1935–36, as in the study of the National Resources Committee—could be used as a basis from which one might calculate the changes in consumption which would follow from cyclical fluctuations of income.

Cyclical Consumption-income Pattern

Fortunately, however, as we have indicated in an earlier chapter, we now have data indicating the relation of consumption to income in the various stages of two complete major cycles from 1921 to 1939, inclusive. These data give us, therefore, a fairly accurate pattern of the relation of consumption to income within the business cycle period. This pattern we may designate as the *cyclical pattern of consumption with respect to income*, or, more briefly, the *cyclical consumption-income pattern*. It should be emphasized that we are concerned with *cyclical* changes in consumption rela-

tive to income. We are not concerned with an abstract proposition about the behavior of consumption relative to income in general. The proposition is that from one phase of the business cycle to another, one can detect a pattern in the changing relationship of consumption to income. It is believed that this cyclical pattern of consumption with respect to income is of fundamental significance.

The relation of consumption to income (as measured in current dollars) for the two major cycles from 1921 to 1939 is shown in the scatter of points in Chart 11.⁸ In the appendix to this chapter is presented a statistical analysis of the functional relation of consumption to income corrected for price changes and population growth.

It will be noted from the chart that, at very low income levels, consumption exceeds income. This means that disinvestment (consumption of part of the stock of capital goods) is going on. At around the \$50 billion income level, consumption equals income. Judging from the raw, uncorrected data here used, one gets the impression that, at low income levels (\$40 to \$60 billions), consumption increases relatively more slowly as income rises than is the case at higher income levels (\$65 to \$85 billions). In part, this may be accounted for by the fact that in the early stages of recovery investment leads the way (see Chapter II), while consumption, being largely induced, follows with a lag. Once this lag is overcome, consumption rises more nearly in proportion to increases in income.

It is significant that the years in which the ratio of consumption to income is relatively low are the more prosperous years—1923, 1925, 1926, 1929, 1937, and 1939. From the general character of the consumption function it could be expected that consumption would be relatively low in relation to income (or, in other words, savings relatively high) in peak years. This is due in no small measure, no doubt, to

⁸ The data for 1921-34 are from S. S. Kuznets, *National Income and Capital Formation, 1919-35*; and for 1935-39 from the Department of Commerce and the National Resources Planning Board.

the high corporate profits of such years, a large proportion of which is saved and retained in the business.

Apparently, the income level is very important as a determinant of the proportion of income consumed, and also

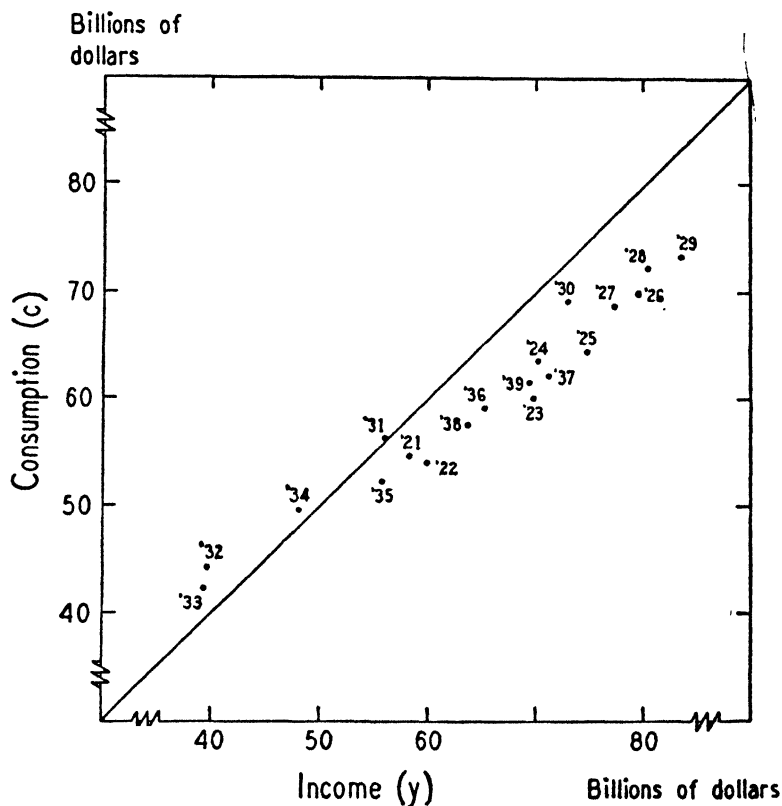


Chart II.

The Relation of Consumption to Income

the position in the cycle. Thus, at the lower turning point (1921-22) in the first cycle 92.2 per cent of the income was consumed, while at the second lower turning point (1932-33) 109.6 per cent of the income was consumed. It requires, ap-

parently, an extremely severe deflation, such as that in the early thirties, to bring about aggregate dissaving or disinvestment. In more normal depressions, even at the bottom, income exceeds consumption, and there takes place a considerable amount of net investment, though much less than at the peak of the boom.

During the seven relatively prosperous years 1923-29, the proportion of income consumed averaged 88.0 per cent. In 1937 and 1939, 88.1 per cent of income was consumed. The proportion of income consumed varied very little in any one year from the general average of 88.1 per cent for all these nine relatively good years. For example, the per cent of income consumed was 88.2 in 1923-24, 88.5 in 1927, and 88.0 in 1929. Such variation as there was, was probably due mainly to the rather volatile item of corporate profits and the related item of corporate savings. In the less favorable years, such as 1924, 1928, and 1938, the proportion of income saved fell off, or, in other words, the ratio of consumption to income rose. The percentage of income consumed in these years was 90.3, 89.8, and 90.6 respectively. In general, one may conclude from these data that, once a fairly high income level is reached, as for the nine years referred to, approximately the same proportion of the income is consumed.⁴

In the fairly high income years, then, about 88 per cent of the national income was consumed, and 12 per cent was saved. Gross savings for the same years amounted to 22.8 per cent of the gross national product.⁵ This consumption-income pattern at relatively high income levels appears to be fairly constant. It is deeply rooted in the customs, habits, and traditions of the people, and in institutions which are not easily

⁴ This conclusion holds also if one defines consumption more narrowly by excluding from this category durable consumers' goods. So defined, the proportion of income consumed averaged 76.3 in the high years, 1923-29. The figure was 76.8 in 1923-24, 77.1 per cent in 1927, 76.1 per cent in 1929, and 77.2 in 1937 and 1939.

⁵ Gross national product = national income plus replacement investment expenditures. Gross savings = net savings plus depreciation, depletion, and obsolescence allowances.

changed and, indeed, very frequently not desirable to change.

In order to maintain a fairly high level of income, it is therefore necessary, as long as this cyclical consumption-income pattern persists, to expend about 22 per cent of the gross national product on real investment (new and replacement). For a \$110 billion gross national product^{*} (which full employment could currently make possible at a price level 10 to 15 points above the 1940 level), this means about \$24 billions per annum. The difficulty of finding investment outlets for so large a volume of expenditures is a major modern problem. As long as the current consumption-income pattern persists, the economy is geared to high investment. It is the consumption-income pattern which explains why it is necessary to maintain investment at a high level in order to achieve full employment.

Stability of Consumption-income Pattern

The question is frequently asked: Why lay so much emphasis upon investment per se? Why not expand consumption? This is a perfectly sensible question. Indeed, it may well be that we ought to encourage consumption. But the fact is that the ratio of consumption to income is not easily increased. Indeed, there is reason to believe that we are right in the midst of institutional developments—structural changes in our economy—which tend, for a time at least, to lower the ratio of consumption to income and to increase the proportion of income saved.

Consider, first, the great development of life insurance—a development in itself thoroughly sound and certainly deserving of public encouragement and support. Life insurance has grown to gigantic proportions in a single generation. In 1880 the assets of life insurance companies amounted to less than \$500 millions. Thirty years later in 1910, they amounted to only \$3.9 billions. Then came the period of rapid growth.

^{*} This would yield a national income of \$98 billions. Gross national product minus replacement capital expenditures equals national income.

By 1940 the assets amounted to over \$30 billions. In 1937 the income of life insurance companies from premiums and investments amounted to about \$5.3. Benefit payments were \$2.4 and expense outlays \$1.0 billions, leaving around \$1.9 billions annually for new investment.

Eventually life insurance will reach financial maturity and will pay out year by year, in benefits and costs, amounts equal to premium receipts and income from investments. When this point is reached, individuals will be able to save by the life insurance method without such individual savings resulting in any net aggregate savings. But as long as life insurance is in process of rapid growth, large reserves are being built up and an annual flow of quasi-compulsory saving is effected. We are currently just at the height of this development, and this is a factor tending to raise the savings-income ratio.

It is a striking fact that just at the point when life insurance savings were accumulating at the maximum rate a vast social insurance program was introduced, based largely on the private insurance principle of accumulation of reserves. Some modifications were made in 1939 in the original plan, reducing materially the probable future size of the old-age reserve account. Nevertheless, large accumulations have already been made and are currently in prospect for some years to come both in the Unemployment Trust Fund and in the Old Age and Survivor's Insurance Trust Fund. In the four years 1937 to 1940, inclusive, the accumulations in these funds proceeded at an average annual rate of \$1.0 billions, the accumulations at the end of 1940 amounting to \$4.0 billions. Thus, on top of annual life insurance savings there has suddenly been injected this important new factor adding to the flow of savings and thereby tending to reduce the ratio of consumption to income.⁷

⁷ It is, of course, impossible to predict the rate at which these funds will accumulate in future. The act relating to both unemployment compensation and old-age and survivor's insurance is likely to be further amended with respect to contributions, benefit payments, and coverage. Moreover, changed economic conditions will affect the rate of accumulation. Estimates, based on

Another institutional development of relatively recent origin affecting the flow of annual savings is the introduction of amortization in real-estate loans and mortgages. Only during the last decade has anything systematic and of general application been achieved along this line in this country. From the standpoint of sound finance, it constitutes an important and, indeed, necessary reform. The real-estate mortgage situation at the end of the twenties was thoroughly bad and contributed to the deflation of the early thirties. If each real-estate mortgage had been amortized year by year to manageable proportions, the process of debt liquidation would have been very much less drastic. From this severe lesson something of value was learned. Real-estate mortgages now usually require an annual payment sufficiently large to cover interest charges and to retire the principal within a given period, ranging from, say, ten to thirty years. This development, already widely adopted, was supported and extended by the provision in the 1935 Banking Act providing that banks may not make real-estate loans having a maturity of five years or more, unless such loans are amortized according to specific requirements. Insurance companies have, in general, adopted a similar practice. And the expansion of mortgage financing (a) through federal mortgage agencies, such as the Home Owners' Loan Corporation, the Federal Farm Mortgage Corporation, and the Federal Land Banks, and (b) under the auspices of mortgage insurance agencies, such as the Federal Housing Administration, has contributed greatly to the use of the amortization device. Real-estate mortgage debt, farm and urban, amounts to around \$35 billions. The amortization payments on this debt volume may quite possibly amount to around \$1.5 billions per annum. This relatively new institutional arrangement is a factor of considerable magnitude and importance, adding to the flow of quasi-compulsory savings.

the artificial assumption that benefits and tax rates as provided in the act as amended in 1939 will continue and that economic conditions will remain the same, have been made indicating net accumulations in the Old Age and Survivor's Trust Fund of \$5.7 billions by 1950.

Finally, note must be taken of the effect upon the gross savings stream of the growth of net corporate saving in the form of (a) depreciation reserves, and (b) retained earnings. The spread of the corporate form of organization and the progressive development of accounting procedures have, in the last few decades, raised charges to depreciation reserves to a level which makes this item by far the largest single source of funds available for investment.⁸ The allocation of funds to depreciation reserves in 1923-29 amounted to \$5.5 billions per annum and in 1936-37 to \$4.6 billions.⁹

Over and above the depreciation and depletion charges are the net retained earnings of the corporate system as a whole. While the former are intended for replacement expenditures, the latter constitute an important source of funds for the financing of net additions to plant and equipment. In 1923-29 corporate net retained earnings (account being taken of corporate losses) amounted annually to \$2.4 billions and in 1936-37 to \$1.1 billions.¹⁰ Thus, the internal sources of funds (depreciation, depletion and net retained earnings combined) averaged \$7.9 billions per annum in 1923-29 and \$5.7 billions per annum in 1936-37. How important these internal sources were for the financing of producers' fixed capital can be seen from the fact that expenditures on plant and equipment averaged \$8.7 billions in 1923-29 and \$6.7 billions in 1936-37.¹¹

Retained earnings in 1923-29 for all corporations reporting net income in the United States amounted to 41.3 per

⁸ Charges to depreciation reserves do not, of course, contribute to the flow of *net* savings. They do constitute the most important part of gross savings. They finance replacement expenditures and, not infrequently, especially in the case of corporations with new plant and equipment recently constructed, are even available to finance expansion.

⁹ Solomon Fabricant, *Capital Consumption and Adjustment*, National Bureau of Economic Research, 1938, pp. 32, 33, and 38; and Charts and Tables on Savings and Investment, T.N.E.C. Hearings, 1939. See also Ruth P. Mack, *The Flow of Business Funds and Consumer Purchasing Power*, Columbia University Press, 1941.

¹⁰ Department of Commerce, and *Statistics of Income*.

¹¹ *Federal Reserve Bulletin*, September, 1939, and estimates by George Terborgh.

cent of net profit.¹² In contrast, the per cent of undistributed profits in Great Britain in 1924-29 averaged only 20.1 per cent.¹³ The difference between the two countries is striking. A part of the explanation of this divergence in corporate practice may probably be found in the difference in the rate of expansion in the two countries. Population increased fifteenfold in the United States during the nineteenth century and only fourfold in England. The growth of corporate enterprise and capital investment has been very much more rapid in this country. It is, therefore, not unnatural that our corporations should have formed the habit of reinvesting a large percentage of net profits—much larger than in countries experiencing a slower extensive growth. And once this has become established practice, it cannot be expected that the policy would quickly be changed, even though a slowing down of extensive expansion justified the retention of a smaller proportion of earnings.

Other sources of investment funds, in addition to those already noted, are the savings of public bodies (sinking funds and the like), individual savings which flow into commercial and savings banks, building and loan associations, individual savings directly invested in stocks, bonds, and mortgages, and the savings of farmers, unincorporated business, and homeowners used directly to purchase real investment goods.

Individual versus Aggregate Savings

Question may now be raised with respect to the main causes of the rather violent shifts in the volume of aggregate savings from depression years to years of relatively high prosperity, as revealed in the schedule of consumption in relation to income in the various phases of the cycle.¹⁴ In answer to

¹² Treasury estimates, Hearings before the Committee on Finance, U.S. Senate, 74th Congress, 2nd Session, on H.R. 12395, p. 18.

¹³ Colin Clark, *National Income and Outlay*, p. 187.

¹⁴ Net savings = Income - Consumption. It should be noted that violent shifts in the aggregate of savings do not mean, as some have supposed, that the propensity to save is unstable. Under a stable consumption function, savings may fluctuate violently as income fluctuates.

this question, it is necessary to stress the fact that the most important cause of this rather violent fluctuation in the volume of aggregate savings is the fact that in depression years such a large part of the individual savings stream is used not to purchase capital goods, but to cover losses. Thus, it is necessary to distinguish between (a) the stream of individual savings which flow annually into the various savings channels (life insurance, building and loan associations, savings banks, and the like), and (b) the aggregate realized savings which remain after account has been taken of the losses incident to the decline in expenditures on investment goods and the consequent fall in income. On the other side, an important part of the explanation of the large aggregate savings in good years must be found in the high level of profits, a large part of which go into savings, either via retained corporate earnings or via individual savings from increased dividends. Thus, business profits and losses account, in large measure, for the high realized aggregate savings of prosperous years and the low aggregate savings of depression years.

A large part of the flow of individual savings, especially in the form of life insurance premiums and savings accounts, actually increased despite the fall in income in the great depression. Thus, the premiums paid to insurance companies increased from \$2,235 millions per annum in 1927-29 to \$2,580 millions in 1931-33, while savings in mutual savings banks rose from \$8,537 millions to \$9,945 millions. Account must, however, be taken of the fact that a considerable proportion of insurance policy holders, suffering heavy property losses particularly in the securities market, made large withdrawals on their cash surrender values. Nevertheless, most of them probably continued to pay their annual premiums out of current income. In general, the more steadily employed part of the population, who also hold the bulk of the insurance policies, are likely to continue to save at very nearly the accustomed rate and to cut expenditures on durable consumers' goods and, to some extent, even on other consumption goods as income declines. The fact that they save a

larger proportion of their incomes in depression years as income declines does not, however, in any way invalidate the Keynesian thesis that individuals tend to save a larger absolute amount when income again rises. Moreover, if we disregard the cyclical fluctuation of income and consider only a change in income *status*, it will usually be true that some part of the net increment of income will be saved. Indeed, we can go much farther and assert with considerable confidence that normally a larger proportion of a larger income will be saved.

Business profits and losses are the volatile part of the national income (income produced). Thus the net income of incorporated businesses and of unincorporated enterprises represented 25.1 per cent of total income in 1929, and only 4.2 per cent in 1932. On the other hand, the compensation of employees, interest, net rents, and royalties, together constituted 74.9 per cent of total income in 1929 and 95.8 per cent in 1932. When, however, business savings and losses are left out of the picture, and attention is concentrated upon the income receipts of *individuals*, a fairly high stability in the percentage distribution appears.

The distribution of income receipts of individuals—property owners, employed persons, and entrepreneurs—changes only moderately in the cycle. Employed persons averaged, in the more prosperous years 1929 and 1936–37, 66.2 per cent of the income receipts of individuals. In 1930–33, they received 64.5 per cent. Property owners averaged 18.3 per cent in 1929 and 1936–37. In the depression years 1930–33 they received 19.5 per cent. Entrepreneurs received 15.4 per cent in the good years and 16.0 per cent in the depression years. Thus, there was a slight advantage in favor of the property owner and entrepreneur in the depression. Moreover, of the employed workers, the salaried persons fared better than wage earners in the depression, but by 1935 the predepression relation of salaries to wages was restored.

With respect to property owners, those drawing income largely from dividends lost ground, while those dependent

on interest gained. Dividends amounted to 7.6 per cent in 1929-30, began to lose ground in 1931, and fell to an average of 5.3 per cent of total individual income receipts during the worst depression years. By 1936-37 the 7.6 level was again reached. Interest receipts gained in the depression, rising from 6.7 per cent of the total in 1929 to 10.7 per cent in 1932-33, and again falling to 6.9 per cent in 1937.

TABLE XXII

*Percentage Distribution of Income Paid Out, by Type of Payment*¹⁸

Year	Total Income Paid Out	Total Compensation of Em- ployees	Entre- preneurial With- drawals	Earnings from Property			Div. and Int.	
				Total	Net Rents and Roy- alties	Divi- dends and Int.	Divi- dends	Inter- est
1929	100.0	65.8	15.6	18.6	4.3	14.3	7.4	6.7
1930	100.0	64.8	15.9	19.3	3.7	15.6	7.8	7.5
1931	100.0	64.5	16.0	19.5	3.3	16.2	6.9	8.8
1932	100.0	63.7	16.3	20.0	3.2	16.8	5.6	10.7
1933	100.0	64.8	15.9	19.3	3.1	16.2	4.8	10.8
1934	100.0	65.9	15.6	18.5	3.2	15.3	5.4	9.7
1935	100.0	66.3	15.9	17.8	3.4	14.4	5.4	8.8
1936	100.0	66.2	15.3	18.5	3.6	14.9	7.5	7.5
1937	100.0	66.7	15.3	18.0	3.6	14.4	7.7	6.9
1938	100.0	67.3	16.1	16.6	3.6	13.0	5.7	7.4

Summarizing the effects of shifts in income distribution upon individual savings, it is probable that interest receivers are able to save more in depression, while dividend receivers are compelled by low incomes to save less. Wage and salary earners who are fortunate enough to retain employment probably seek to maintain their savings. Some are able to increase their savings, while others, by reason of property losses, reduction in earnings, and the necessity of giving aid to relatives, are compelled to curtail their savings. Wage and salary earners who suffer unemployment are compelled to use up their past accumulations.

On balance, the flow of institutional and individual thrift streams probably declines in deep depressions in which there

¹⁸ From Survey of Current Business, June, 1939.

is a severe fall in income. In a moderate depression it is by no means certain that this is the case. At any rate, it appears probable that individual and institutional savings of the character referred to above fall less than the aggregate income receipts of individuals. We know, however, that the aggregate realized savings of society as a whole decline relative to national income when the aggregate income falls to low levels; and, conversely, rises proportionally more rapidly than income, at least until the income reaches a moderately high level. Since this relationship does not appear to hold for a large part of individual savings and individual income receipts, the explanation must be sought mainly in the violent fluctuations of business profits and business losses. Business profits supplement individual savings in prosperous years, and business losses offset individual savings in depression years so as to produce violent swings in aggregate or realized savings. Thus, the ratio of aggregate savings to income is low in low income years and high in high income years, as revealed in our cyclical savings-income pattern.

The attention of economists has recently been directed to the high stability of the per cent of value product of manufacturing paid out to wage earners, despite violent fluctuations in output and prices. $\text{Payrolls} = \text{Employment} \times \text{Wage Rates}$, and $\text{Value of Product} = \text{Output} \times \text{Prices}$. In general, wage rates fluctuate somewhat less than wholesale prices, while employment fluctuates more than output. Thus, the ratio of payrolls to value of product remains relatively stable in spite of extreme fluctuations in income. It appears, therefore, that the fluctuations in business profits are not mainly due to fluctuations in payrolls. Labor cost per dollar of sales remains remarkably stable. The fluctuations in profits are due mainly to the inability to adjust overhead costs to fluctuations in sales.

When value of sales falls off (due to a combination of decline in unit price and quantum sold—both more or less subject to control), the employer apparently is able, in general, to make sufficient adjustments so that payrolls remain,

for the economy as a whole, approximately a constant ratio of value of product. This relatively constant ratio is the result of the interrelation of various factors. If in the face of a declining national income employers are confronted with rigid wage rates, they are then restricted in possible adjustments to price changes, changes in output, changes in employment, and changes in efficiency. If all employers are confronted with rigid wage rates, it may be expected that the national income will fall less than would otherwise be the case, since wage receipts constitute so large a proportion of total income. If, however, wage rates are not rigid, income will fall more rapidly. On the other side, however, the employer has available in these circumstances an additional method of adjustment, namely, the reduction of wage rates in his particular shop. This reduction is his answer to the general wage reduction and the consequent further fall in income in the country as a whole.

The fluctuation in the ratio of aggregate realized savings to aggregate income from depression to prosperity is mainly the result of large fluctuations in business profits and business losses. Aggregate income fluctuates more violently than the income receipts of individuals, and aggregate savings fluctuate far more violently than individual savings. Thus, aggregate savings fluctuate widely in relation to aggregate income from depression to prosperity.

The Consumption Function and Unsatisfied Consumer Wants

There is no evidence that the cyclical consumption-income pattern has shifted, or is likely to shift in the near future, so as to increase consumption and reduce savings. At the national income levels reached in 1923-29 the consumption-income ratio was 0.88. Again, as a relatively high income level (price changes considered) was reached in 1936-39, the ratio once more stood at 0.88. These figures, while inconclusive because of a considerable margin of error in the

original data, appear to support the thesis that it is not easy to achieve, except by very slow adjustments, a high consumption economy.

It is not easy to solve the problem of full employment by raising consumption. It is true that there are untold unfilled consumer wants waiting to be satisfied. But it is not possible to leap from this fact to the conclusion that unemployed resources can, therefore, readily be absorbed in the consumption goods industries. The fact is that, at moderately high income levels, persistent institutional factors determine within rather rigid limits the ratio of consumption to income. The forces determining this ratio are, in part, the distribution of income, habitual practices (strengthened or enforced by institutional arrangements) with respect to individual savings, corporate practices with respect to depreciation reserves and retained earnings, and finally the inevitably high amplitude, as output changes, in the fluctuations of business profits owing to the high proportion of fixed costs under modern production methods.

The superficial view that the persistence of vast unsatisfied consumer wants is an answer to the problem of limited investment outlets—outlets inadequate to fill the gap fixed by the consumption-savings pattern—overlooks the stubborn fact that this pattern is, according to all the available evidence, a highly stable one. It is not likely to be radically changed from one decade to another except by important modifications in fundamental institutional arrangements. Some of these changes can eventually be expected to take place automatically, as for example the cessation of aggregate insurance savings once insurance companies cease to grow and become relatively mature. Others will come only as a result of deliberate policy, such as the redistribution of income. An increase in social benefits and a shift in the tax structure from consumption taxes to middle and upper-class incomes work in this direction. Some automatic adjustment may come through the persistence over several decades of a very low rate of interest, though it is by no means clear what the net

effect on savings may prove to be. The current trend toward an increasing quasi-monopolistic control of the prices of finished manufactured products threatens to yield a lower ratio of consumption to income. But whatever the net trend, whether through automatic adjustment or conscious policy, there can be little doubt that no important shift in the consumption-income pattern can be expected within a short period. We have to recognize that we are dealing here with a function that is highly stable and is not easily changed. For this reason it is necessary, however much one may wish to emphasize consumption, to explore to the limit every available investment opportunity. Given a certain collective consumption-income pattern, it is quite impossible to achieve reasonably full employment without large investment outlays supplemented with public investment and with community consumption expenditures.

With respect to the cycle, it is just because of the high stability of the consumption function that fluctuations in the rate of investment produce the business cycle. If, for example, the consumption function shifted up and down in inverse correlation to the fluctuations in investment, no cyclical movement would follow from these fluctuations; as investment fell off consumption would fill the gap. Early investment cycle theorists did not make this point explicit.¹⁶ But there was implicit in their reasoning the assumption that the consumption function was stable, or at least did not shift so as to offset fluctuations in investment.

¹⁶ It is one of the important achievements of Keynes' *General Theory* to have formulated explicitly the role of the consumption function in cycle theory.

Appendix: A Statistical Analysis of the Consumption Function

by

Paul A. Samuelson

AMONG the most striking uniformities yet uncovered in economic data are the relationships between various categories of expenditure and family income. Their regularity is substantiated by studies which go back as far as the nineteenth-century investigations of Le Play and Engel.¹ In fact, so strong are these income effects that it is very difficult to find empirically the influence of price, the variable customarily related to demand by the economic theorist.

In recent years business cycle theorists have tended more and more to be of the opinion that *investment* is the strategic moving factor underlying fluctuations and determining the level of the system. This view implies as a corollary that *consumption expenditure should be related passively to income*. This is a fundamental assumption not only of the Keynesian system (e. g., the doctrine of the multiplier), but of most other schools as well.

Recent statistical material provides the opportunity to test this relationship, and numerous attempts have been made. Three general methods have been employed: ² (a) the analysis of budgetary data, representing a cross section of the different income levels at the same time; ³ (b) the use of time series of national income, consumption, capital formation, etc.; ⁴ (c) more or less plausible

¹ For citations see the voluminous bibliography in *Studies of Family Living in the United States and Other Countries* by Faith M. Williams and C. C. Zimmerman, U.S. Dept. of Agriculture, Publication 223; C. C. Zimmerman, *Consumption and Standards of Living*, Van Nostrand, 1936; R. G. D. Allen and A. L. Bowley, *Family Expenditure*, P. S. King, 1935.

² R. and W. M. Stone, *Review of Economic Studies*, October, 1938, gives a good summary of work done up until that time.

³ Maurice Leven's Brookings Study, *America's Capacity to Consume*; Stones, *op. cit.*; National Resources Committee and W.P.A. study, *Consumer Expenditures in U.S., 1935-36*; H. Mendershausen, *American Economic Review*, September, 1939, *Review of Economic Statistics*, August, 1940; E. W. Gilboy, *Review of Economic Statistics*, August, 1940.

⁴ Colin Clark, *Economic Journal*, June, 1937, and September, 1938; Clark and Crawford, *The National Income of Australia*, Angus and Robertson, 1938; Kalecki, *Essays in the Theory of Economic Fluctuations*, Farrar and Rinehart, 1939.

rough estimating of the numerical magnitude of the marginal propensity to consume, such as have been made by Kahn, Keynes, J. M. Clark, and others. It is quite possible that the estimates under this last heading are the most useful of all for policy decisions. Nevertheless, it is impossible to appraise their validity by unambiguous statistical methods; consequently, no discussion of them will be attempted here.

However, recent data on national income provided by Kuznets⁵ suggest the possibility of utilizing the second method for a new statistical appraisal of the consumption function. A rudimentary discussion of the comparability of the results of methods (a) and (b) will be attempted, but this will not be treated in the exhaustive fashion it deserves.⁶

ADJUSTMENTS OF OBSERVATIONS

Kuznets presents *national income produced* and *consumption outlay*, each in current prices, for the years 1919-35. The first two years may be presumed to contain the anomalous effects of the first World War period and are, therefore, excluded from this discussion. It would be very desirable to secure data for the five years which have elapsed since 1935, and Kuznets has presented elsewhere data for the first two of these years. However, the National Resources Planning Board has made provisional estimates of these magnitudes for the four years through 1939. While admittedly tentative, and despite their lack of strict comparability, these were considered sufficiently informative to be included in the analysis.

If dollar consumption figures are plotted against dollar national income figures for the nineteen years (see page 236), no simple relationship is apparent. Perhaps if the period were subdivided into the twenties and into the thirties, a linear relationship might be found for each half of the data. But these would differ, and the data for the whole period could be represented only by an irregular curve with a definite twist between the two levels.

A correction would seem to be in order if a reversible analytical

⁵ S. Kuznets, *National Income and Capital Formation*, National Bureau of Economic Research, 1937.

⁶ Cf. J. Marschak, *Canadian Journal of Economics and Political Science*, August, 1939; Hans Staehle, *Review of Economic Statistics*, August, 1937, and August, 1938.

relationship is sought rather than simply a historical description of past happenings. Because of changes in prices, changes in money income and consumption are not the same thing as changes in real income and consumption. From economic theory and from observation, we should not expect to find an invariant relationship between money consumption and money income, regardless of the real levels which these represent. A doubling of *all* prices simultaneously would presumably leave each individual in the same position as previously; we should expect, therefore, no change in real quantities, abstracting from the dynamical effects of *changing* prices. Unless a correction were made for price changes, it would appear that two different observations on the consumption function were available, and that the marginal propensity to consume were equal to the average propensity to consume. Thus, if previously money consumption equaled national income (investment being zero), and suddenly all prices doubled evenly, presumably money consumption would double as income doubled. This might be erroneously interpreted to indicate a marginal propensity to consume of unity, when in fact only one observation of the true *real* consumption function had been made, and no basis exists for inferring the magnitude of the marginal propensity to consume.

For the years before 1936, Kuznets presents a deflated series of income and consumption in terms of 1929 prices. The precise method of adjustment employed by him is a complicated one and could not be applied to the last four observations. Experimentation with the data for the 1921-35 period showed, however, that simply deflating both income and consumption by the Bureau of Labor Statistics Wage Earner's Cost of Living Index led to almost precisely the same relationship as that derived from the more complicated adjustment. Therefore, this technique was used on the whole series, homogeneity for the whole period being preferable to greater exactness in the earlier years.

A second correction readily suggests itself. The same real income divided up among more people cannot be expected to yield the same real consumption expenditure. Perfectly balanced extensive population growth, in which each individual is exactly as well off as previously (derived, for example, by combining statistics of many homogeneous countries), would, as in the case of price changes discussed above, introduce only spuriously new ranges of observation of the consumption function. A need arises, therefore, to place

the data upon a standardized or per capita basis. By the use of midyear census estimates the observations were adjusted to the 1929 population level.

These two corrections yielded a series of observations of United States 1921-39 consumption outlay and national income produced, each in terms of 1929 prices and 1929 population.⁷

CONSUMPTION AND INCOME PRODUCED

In Chart 12 is plotted the scatter of real per capita consumption against real per capita income. The corrected observations present a much more unified picture, the data being no longer divisible into two heterogeneous parts. Moreover, the scatter gives at least the appearance of linearity. Determining by conventional least squares technique the regression of consumption on income, we found a constant marginal propensity to consume of .54 (i. e., a multiplier of about 2.2) and a level of income at which savings would be zero of about 59 billion dollars. The closeness of fit as indicated by the Pearsonian coefficient of correlation exceeds +.97.

This is a high correlation, even for the field of economic time series, where sizable correlations are the rule. However, detailed examination of the data suggests that the deviations from the line of best fit are not randomly distributed.

Therefore, we tested the hypothesis that a secular trend may have been operating throughout the period. We resorted to multiple correlation in which *time* was included as a linear factor. Utilizing only the pre-1936 data, a significant improvement in fit resulted, the consumption schedule being shifted upward by about .2 billion dollars per year. The point of zero saving was still around 60 billion dollars in 1929, but shifting upward at a rate of some-

⁷ Without these adjustments the results would be not at all comparable with budgetary studies. These were made as of *constant prices*, and relate to individual and family decisions. Moreover, from the standpoint of a reversible relationship of relevance to the problem of (say) the effect of new investment expenditure upon income, clearly population will not increase *pari passu* with such investments. However, the case for eliminating price changes is, from this latter point of view, not so strong. If the price changes recorded in the data were rigidly related to changes in income (hence, investment), then the "pure" *ceteris paribus* relationship with prices removed may be an irrelevant one; we may seek rather the resultant of its shifts. It is precisely considerations of this latter type which we should use to justify our *not* taking into account the effects of changing distribution of income.

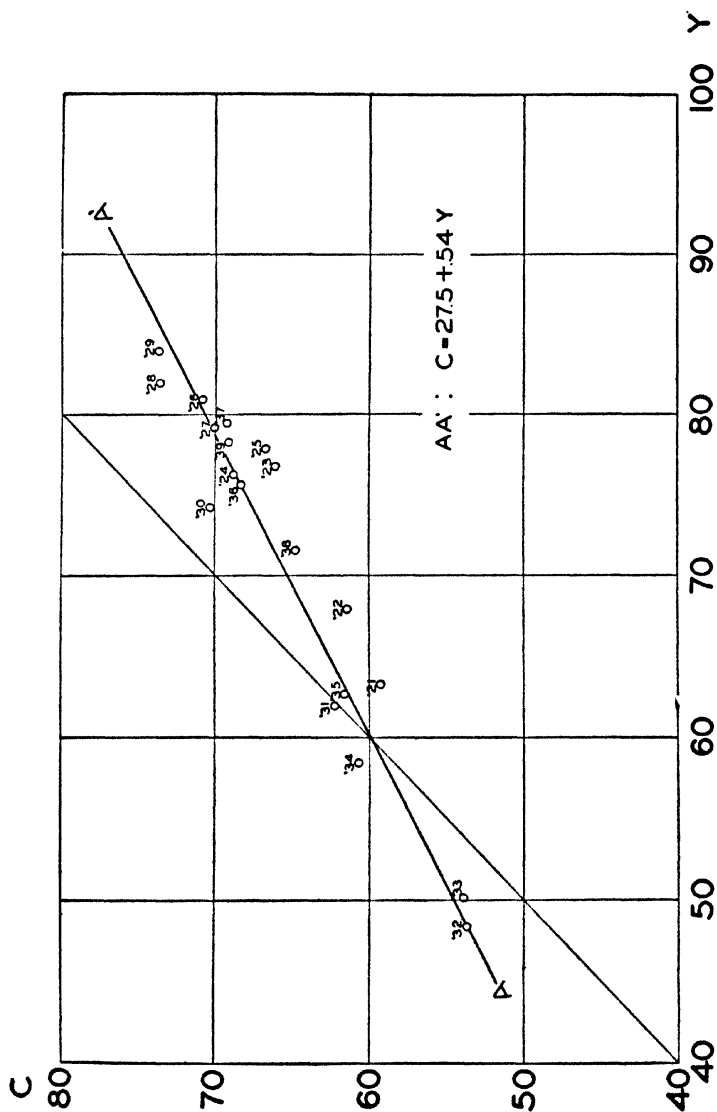


Chart 12.

The Consumption Function in Terms of 1929 Prices and Population

thing less than .1 billion dollars per year. The marginal propensity to consume was found to be only slightly higher, namely, .56; i. e., a multiplier of 2.23.

But, two considerations argued against the validity of the previous multiple correlation analysis. When the last four observations became available and were included in the analysis, there no longer appeared to be a sizable trend factor. The multiple regression coefficient of consumption on time was not found to differ significantly in a sampling sense from zero; and the slight increase in the goodness of fit of the multiple regression over the simple regression was insufficient to justify the introduction of a new parameter with a subsequent loss of one degree of freedom.

Besides, analysis of other components of Kuznets' study suggested an alternative explanation of the upward drift of consumption prior to 1936. This is explored in the next section.

CONSUMPTION, AGGREGATE INCOME PAYMENTS, AND ENTERPRISE SAVING

May not the secular trend discussed above simply be the reflection of a variable whose influence can be explicitly appraised? More specifically, in the early thirties income actually received by consumers, i. e., *aggregate income payments*, exceeded *national income produced* by billions of dollars because of calculated business dissaving and government dissaving (deficits).⁸ The reverse was true in the twenties. This provides a possible explanation of the upward drift in *consumption* as compared to *income produced*. It is also in line with experience and theory which suggest that individuals' consumption outlay should depend primarily upon income received.

To check this hypothesis we plotted in Chart 13 *consumption* (1929 prices and population) against *aggregate income payments* (deflated as above for price and population changes), using the data available through 1935. The points lie almost upon a straight

⁸ There has been some controversy over the problem of whether the volume of real dissavings may not be overstated because of changes in values of inventories and other business losses, and whether the volume of dissavings represents an equivalent splashing of the community with purchasing power. This is not the place to enter into this confused discussion. It will suffice to point out that *aggregate income payments* is the primary observable series, and that errors in reckoning enterprise savings will distort only the value of *income produced*.

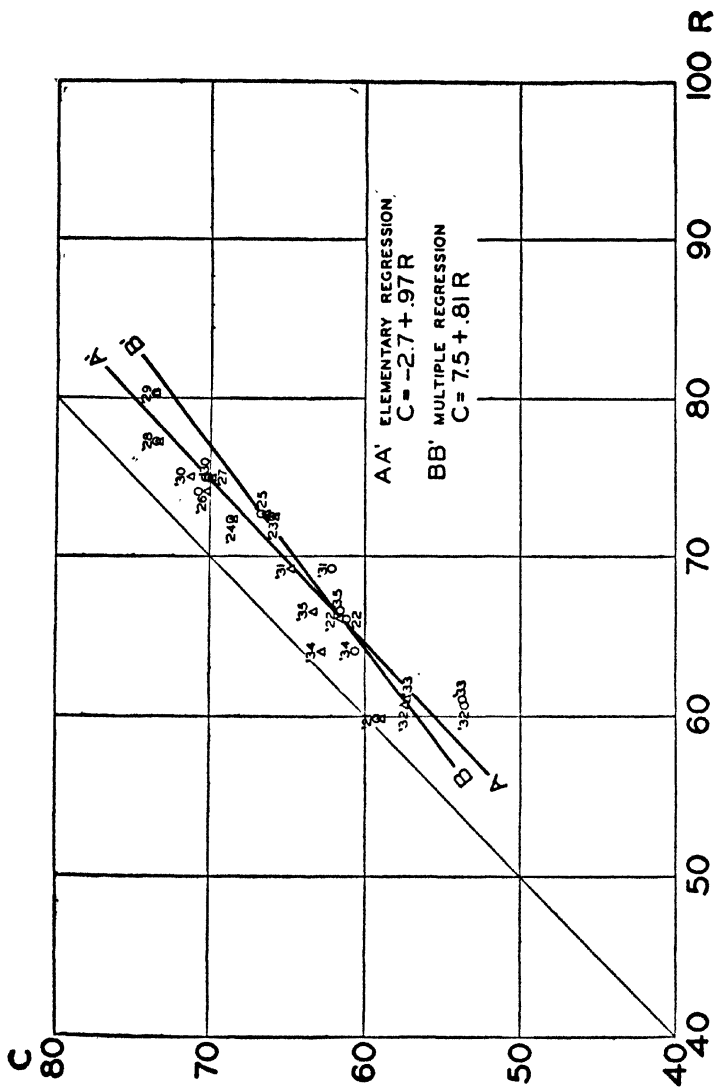


Chart 13.
The Consumption Function in Terms of Aggregate Income Payments

line, the coefficient of correlation being almost $+ .96$. There is no noticeable drift toward increasing consumption. This was confirmed by multiple correlation analysis; the influence of time was found to be insignificant and in the opposite direction to the previous trends.

Thus, closer analysis suggests that there was no increase in consumption out of the same income received. The thirties' increase in consumption compared to income produced seems explicable on the grounds that corporations were saving less (dissaving), not that less was being saved out of income received.

Quite surprisingly, *aggregate income payments* (= national income paid out) varied *less* in this period than did consumption outlay. Savings appeared at all levels of the *aggregate income payments*. The marginal propensity to consume computed from the elementary regression of consumption on income payments has the high value of $.97$.

If we compute the marginal propensity to consume from the regression of income payments on consumption, we arrive at the anomalous coefficient of 1.06 . This seems to indicate an unstable system in which the secondary effects of new expenditure would be unlimited and cumulative. Actually, the leakages incident upon enterprise saving induced by extra income would serve to make the system stable and all secondary effects finite.

This is illustrated in Chart 14 which shows *total enterprise savings* (1929 population and prices) against *national income produced* (1929 base). The simple correlation is $+ .91$. A least squares calculation of the marginal propensity of total enterprise to save yields the very high figure of $+ .49$. An increase of income produced of one dollar results in 49 cents of saving (or less dissaving). This accounts for most of the leakages incident upon net investment; as far as these data go, the leakages incident upon household savings are much smaller and possibly negative.

While income received should be expected to be the dominating determinant of consumption, income produced but not distributed might be expected to have some effect. In a perfect capital market where book and market values coincide, corporate earnings plowed back into the business would thereby increase individuals' equities and make them less anxious to save out of given income received. (Alternatively, individuals may reckon their

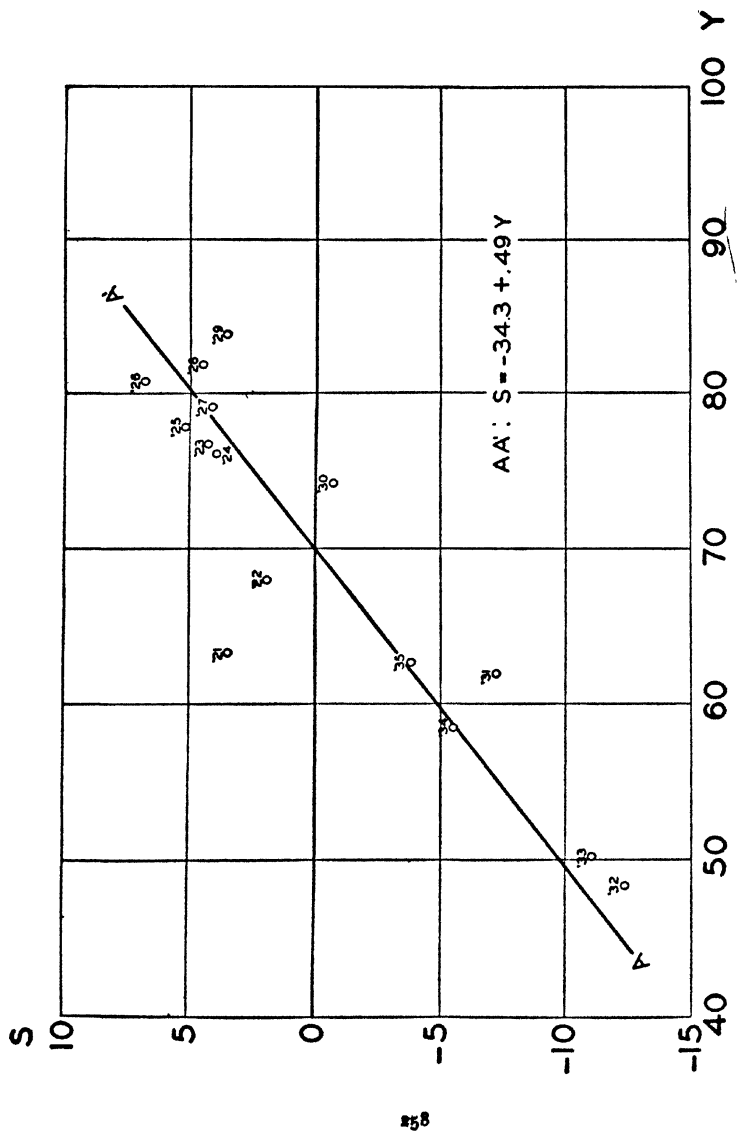


Chart 14.
Total Enterprise Savings in Relation to Income

true income as that produced, not that actually received, and would, therefore, consume more.) Similarly, when dividends exceed earnings (as in amortization of "wasting" mining properties), not all income received may be regarded as true income out of which to determine consumption.

In the real world we should expect the relationship between consumption and enterprise savings to be tenuous. By multiple correlation analysis an attempt was made to evaluate the effect of such savings upon consumption for given levels of income received.

The small triangles in Chart 13 show the net regression between consumption and income received for the level of enterprise saving in 1929. The "net" marginal propensity to consume is reduced to $+.81$. An increase in enterprise savings of one dollar increases consumption by approximately 23 cents; i. e., shifts the schedule up by that amount. This seems plausible; while unreceived produced income has some effect upon consumption, such "dollars" are only about one quarter as effective as dollars actually received.

The following statistical magnitudes are included for possible further exploration by others:

TABLE XXIII

A. Means and Standard Deviations

	<i>Means of Series †</i>	<i>Standard Deviations</i>
X ₁ Consumption (corrected) (millions of \$)	64,857.6 (65,490.3) *	6,286.23
X ₂ Income Produced (corrected) (millions of \$)	69,540.0 (70,934.5) *	11,153.69
X ₃ Aggregate Income Payments (corrected) (millions of \$)	69,733.3	6,207.84
X ₄ Total Enterprise Savings (corrected) (millions of \$)	189.73	6,019.13
X ₅ "Time" (years; 1920 = 0)	8.0 (10.0) *	4.32 (5.48) *

† Unless otherwise indicated, all magnitudes are for the period 1921-35.

* 1921-39.

TABLE XXIV

B. Correlation Coefficients (1921-35, unless otherwise indicated)

	X_1	X_2	X_3	X_4
X_1				
X_2	+ .96 (+ .97) *			
X_3	+ .96	+ .92		
X_4	+ .79	+ .91	+ .71	
X_5	— .29 (— .05) *	— .50 (— .15) *	+ .92	+ .91

* 1921-39.

The square of the multiple correlation coefficient of consumption on *aggregate income payments* and *enterprise savings* equals .95, and the square of the partial coefficient of correlation between consumption and aggregate income payments equals .85. The analysis must be taken with a grain of salt because of the high intercorrelation between the independent variables, *income payments* and *enterprise savings* ($= +.7$). This renders a precise determination of the respective weights of income and savings impossible. An even higher intercorrelation between savings and income produced ($= .9$) rendered meaningless multiple correlation analysis of these variables and consumption.

In conclusion, the opinion may be ventured that the statistical observations bear out the expectations of theory except with respect to the very sensitive relation of *consumption* to *aggregate income payments*.

Chapter XII

PUMP-PRIMING AND COMPENSATORY FISCAL POLICY

MONETARY policy is an important weapon which we cannot afford to dispense with in cyclical compensatory policy. But it has severe limitations and must be supplemented with other methods. This statement must not be interpreted to mean, however, that even a complete arsenal, involving all the known weapons of attack upon the cycle, is really adequate to stabilize a private enterprise economy. While a program of positive action is necessary, and to a degree effective, complete stability is, nevertheless, unattainable.

Cyclical fiscal policy may be discussed under two headings: first, a cyclically adjusted public spending program; second, a cyclically administered tax policy.

The policy of public spending with respect to the business cycle involves a consideration of "pump-priming," in the strict sense in which that term should be used, in contrast with a policy of public compensatory spending as an offset to fluctuations in private investment. It involves, moreover, theoretical consideration of the Multiplier Principle and the Principle of Acceleration. It involves, in addition, a consideration of the types of expenditure most effective in view of the Multiplier and Acceleration principles as instruments to lift the national income, whether through pump-priming or through compensation.

It is important to make a sharp distinction between the pump-priming concept and the concept of compensation.

Pump-priming is not to be confused with compensatory spending.

The term "pump-priming" carries with it the implication that a certain volume of public spending, varying under different conditions, will have the effect of setting the economy going on the way toward full utilization of resources on its own power without further aid from governmental spending. It is not true, as has sometimes been suggested, that the pump-priming concept implies that only a very small amount of public spending will set the economy operating at full capacity. A pump may require much or little priming, depending upon a variety of conditions; and, similarly, the pump-priming concept carries with it no implication as to the amount of spending necessary, but only the implication that, whatever the amount required, sooner or later the economy can operate on its own motive power.

The Multiplier Principle has no necessary connection with pump-priming. It carries with it no connotation with respect to whether the economy can function at full capacity sooner or later without the aid of government spending. It involves, strictly speaking, only the notion that a given amount of public spending will have an effect upon the national income in excess of the volume of expenditures made. It involves the notion of a "multiplier," but not the notion of a self-perpetuating mechanism which under normal conditions has the capacity of operating under its own "steam."

Pump-priming, using the term in the strict sense indicated above, is intended to be a remedy for a temporary maladjustment which prevents the society from functioning in a normal manner so as to recover from depression. The economy needs to be shoved off dead center, so to speak, in order to resume the normal movement from crisis and depression to revival and recovery. It may be that the missing spark is a maladjustment in the cost-price structure, which rigidities in the system make it difficult to overcome without the application of a special remedy. In this case, public expenditures may have the effect of temporarily increasing income and

output in the depressed areas, thereby facilitating a readjustment of the price structure toward a more normal relationship. It may be that the missing spark is lack of confidence on the part of business entrepreneurs, owing to the depressing effects of contraction. A given volume of public expenditures may, however, start activity in an upward direction and encourage people to a less pessimistic and truer view of future prospects. It may be that the accumulation of replacement needs owing to depreciation and obsolescence has reached a point very favorable to larger capital expenditures, or that the accumulation of innovations with respect to new products and new techniques has reached a point favorable to new investment. But these investment possibilities may await a determined and vigorous leadership behind which a host of timid entrepreneurs are ready to follow. Such leadership, however, may for many reasons not be forthcoming from private entrepreneurs, but may require government action. Under these conditions, pump-priming may prove very effective.

Question may be raised how far the situations just cited are realistic descriptions of actual conditions. Such situations doubtless do more or less prevail in different depressions, varying from country to country and from one cycle to another, but their importance is difficult to appraise.

The concept of "pump-priming" is different from "compensation" in that the latter connotes no implications with respect to setting the system going on its own momentum. The latter concept, strictly conceived, implies merely that public expenditures may be used to compensate for the decline in private investment. What is the order of magnitude of the effectiveness of the compensation is not in question. A policy of compensation may be said to accomplish its purpose even though the public expenditures do not succeed in bringing the economy to full recovery. It may be said to be successful even though it succeeds in achieving a rise in the national income no greater than the volume of expenditures made. It accomplishes the purpose intended, at least in a

measure, in so far as it succeeds, whether applied in the period of depression and contraction or in the period of upswing, in lifting the income higher than would have been the case had these expenditures not been made. The expenditures are intended to compensate in some measure for the inadequate volume of private investment.

The Leverage Coefficient

Expenditures made, whether with the intent of priming the pump or the intent of compensating for low private investment, *may*, however, operate with magnified effect. The force of each dollar spent may turn out to have a considerable leverage. This leverage may operate in one of two directions. An expenditure may have secondary effects (a) upon consumption expenditures and (b) upon private investment expenditures. The secondary effects of a given volume of public expenditures upon consumption are in the current literature usually discussed under the term "Multiplier Principle," while the secondary effects upon private investment are referred to under the term "Acceleration Principle." This terminology is, of course, quite arbitrary, since the initial expenditures may be regarded as having raised the national income by a "multiplier" or may be thought of as having an "accelerated effect" on the income. To avoid confusion, the coefficient which must be attached to the initial increment of expenditure in order to raise this increment to the incremental increase in the national income may be termed the "leverage." The leverage coefficient, therefore, in itself indicates nothing with respect to whether the secondary effects operate through consumption or through investment. It may measure the effect of the Multiplier Principle, or the effect of the Acceleration Principle, or a combination of both. Where it is desired to segregate the two, the terms "multiplier leverage" and "acceleration leverage" may be used.

The leverage coefficient may, of course, apply to both pump-

priming expenditures and compensation expenditures. If a leverage coefficient is, in fact, applicable to pump-priming expenditures, it is clear that the volume of necessary expenditures is thereby less than would otherwise be the case. Similarly, if a leverage coefficient is applicable to compensation expenditures, it is clear that the desired increase in the national income can be achieved by a smaller volume of initial expenditures. It is, of course, clear that the distinction between pump-priming expenditures and compensation expenditures is simply a matter of the intent with respect to what it is sought to achieve; or after the event one may conclude what, in fact, was the effect of a given volume of expenditure—whether, in fact, the pump was primed or the effect was merely to compensate for the time being for current low private expenditures. Looking back over the experience after the event, it may, of course, turn out that neither effect was achieved. The expenditures might (a) fail to have any effect on the national income; (b) have an exclusively compensatory effect upon the national income; or (c) have a compensatory effect plus a pump-priming effect.

This brings us to a more detailed consideration of the Multiplier and Acceleration Principles. The Multiplier Principle, as we have just indicated, has to do with the secondary effects of the governmental expenditures upon consumption expenditures and, therefore, upon income and employment, while the Acceleration Principle has to do with the induced effects of the governmental expenditures upon private investment and, therefore, upon income and employment.

The Multiplier

The Multiplier Principle, applied to fiscal policy, relates an increment of governmental expenditures to a consequent increment of consumption expenditures. Let us assume that a billion dollars is expended on public works. The billion dollars of new funds poured out into the community is re-

ceived by the contractors, who, in turn, pay out a part in wages and salaries, a part in dividends,¹ a part in the purchase of materials from manufacturers, and a part in the purchase of materials from raw material producers. These, in turn, similarly pay out a part in wages and salaries, a part in dividends, and a part in finished, semifinished, and raw materials. The Multiplier Principle is, however, concerned exclusively with the effect of the initial expenditure on *consumption*, and is, therefore, peculiarly concerned with the effect of such expenditures upon the receipt of wages, salaries, and dividends. It is clear that it is highly improbable that the full billion dollars spent by the government will materialize down through the various stages in a billion dollars of wages, salaries, or dividends. The reason for this is that many entrepreneurs in the various links in the productive chain will supply the goods sold from stock, will convert inventories into idle cash balances, or pay off bank loans and other debt obligations. Moreover, even though they supply their sales from current production, they will use a part of their profits not to pay dividends, but to accumulate cash or to pay off debts. Thus, it is clear that the billion dollars spent by the government on public works does not all materialize in income for individuals, whether wage earners, salaried employees, or stockholders. A part of the funds is diverted from becoming a part of the income stream by being drained off into idle balances or debt cancellation.

In a similar manner, the enlarged income of individuals flowing from the governmental expenditure and public works—the increased income in wages, salaries, and dividends—is not all used for consumption expenditures. The part that is not expended on consumption goods is saved. Such savings may be used either to pay off debt, held in idle balances, or used for financial investment in mortgages, securities, life insurance policies, and the like. It may, of course, be true

¹ For our purposes here the term "dividends" is understood to include dividends as such and also partnership profits or individual proprietorship profits, which in this form of business organization would be the equivalent of dividends in a corporation.

that in certain cases the individual will directly expend his savings on real investment in a house, farm equipment, or other investment goods. In this latter case it will be seen that such an individual is performing a dual function. On the one side, he is saving a part of the income and, on the other side, he is simultaneously making a purchase of real investment goods. As far as the Multiplier Principle is involved, we are concerned only with the saving function, and we shall regard his real investment purchases as quite independent, just as though they were performed by another individual.

To repeat, the initial billion dollars of private investment ² or government outlays on public works does not all eventuate in consumption expenditures. A part is drained off directly by the entrepreneurial units engaged in the productive process in debt payments and in idle balances, and a part of that paid out to wage earners, salaried employees, and dividend recipients is saved. Thus leakages, whether in the form of debt cancellation, the hoarding of idle balances, or financial investment, occur down the entire line of business units and individuals engaged in the private investment or public works project. The magnitude of these leakages determines, in the final analysis, what the secondary effects of the initial expenditures will be upon the volume of consumption expenditures.

The ultimate effects of the initial billion-dollar investment or public works expenditures upon consumption, of course, do not stop at the stage we have reached in our analysis. The individuals participating in the private investment or public works project decide to spend a portion of the new income they have received in consumption purchases. Thus, we have reached the first stage in tracing out the secondary consequences of investment or public works expenditure upon consumption. The expenditures made on consumption goods

² The initial expenditure which operates through the cumulative process to raise the national income may, of course, be independent or spontaneous private investment, or it may be governmental expenditures.

now set in motion a new productive process necessary to supply these consumption goods. The funds thus expended again seep down through an entire productive process. Again, a part is not paid to wage and salary earners or dividend recipients, but is sidetracked in the form of debt cancellation and idle balances; and, again, a part of the income received by wage and salary earners and dividend recipients is shunted off into savings and utilized for repayment of debt, held in idle balances, or used for financial investment.

This process continues indefinitely into the future and may be represented by the diagram in Chart 15 which shows the successive consumption expenditures flowing from an initial private investment (or public works expenditure) of \$500 millions—each consumption expenditure being smaller than the preceding volume of purchases by the amount of leakages involved.

What these leakages actually are in any given situation can, of course, be determined only by statistical investigation, though certain *a priori* judgments may be made with respect to their probable quantitative importance. Keynes has assumed that in England the leakages in a period of relative depression probably amount to 50 per cent, so that each successive expenditure is 50 per cent lower than the preceding one. J. M. Clark has argued that under American conditions the leakages are probably $33\frac{1}{3}$ per cent, so that each successive expenditure is two thirds of the preceding one. This was also the rough guess of Keynes with respect to American conditions.

A point needs to be made with respect to the average period of time intervening between these successive expenditures. Distinction must here be made between the average time interval between successive consumption expenditures, here under consideration, and the average time interval involved in the income velocity of money. In the case of the latter, it is clear that, if the income velocity per year is three, the average time interval between the point at which a *dollar* becomes income for someone and the point at which it again

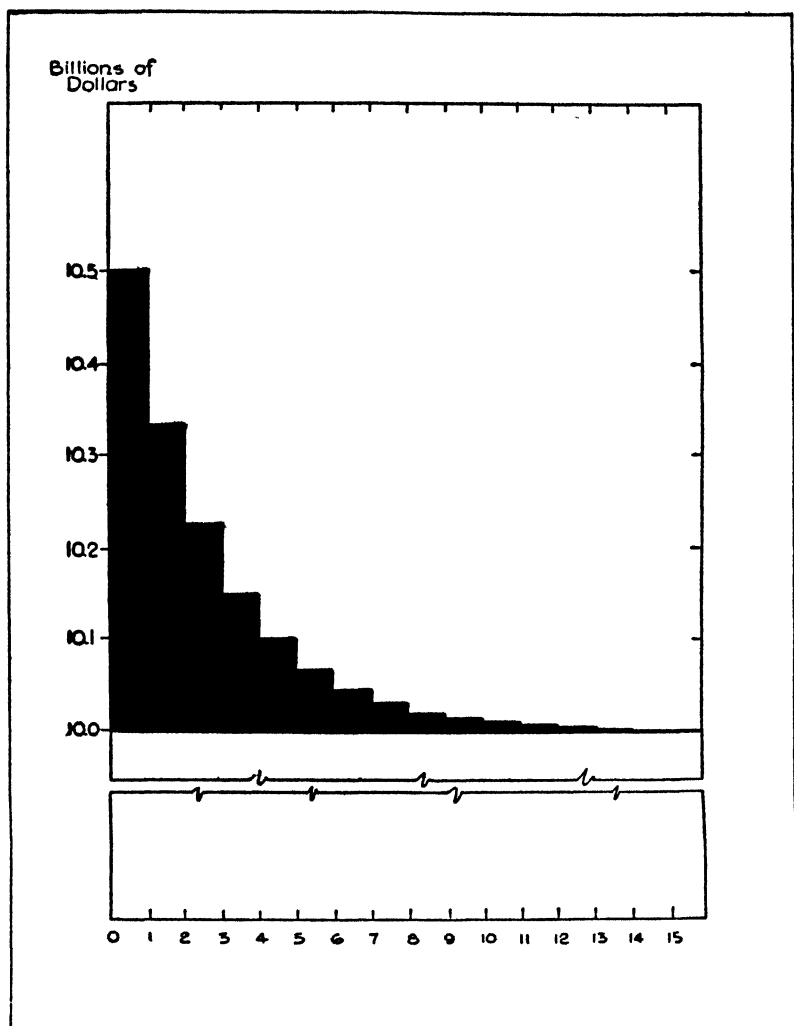


Chart 15.
Consumption Expenditures Induced by Single Investment Expenditure

becomes income for someone, as it passes through the whole circuit of production, must be four months. Here it is a question of the length of time that it requires on the average for *a dollar* to pass from one income recipient to another. This, however, is not the time interval involved in the case of the Multiplier analysis. In this latter case, the time interval is the average interval between the successive consumption expenditures. The average income velocity time interval might, for example, be four months, whereas the time interval between the successive consumption expenditures involved in the Multiplier analysis might well be two months.

Distinction must be made also between the average time interval and the marginal time interval with respect to the *income velocity period* and the *Multiplier period*. The marginal income velocity refers to the velocity of the last increment of money injected into the system, and this might be higher or lower than the average velocity. Accordingly, the income velocity period would be correspondingly raised or lowered, as the case may be. The marginal Multiplier period, however, refers to the time interval of the new increment of consumption expenditures flowing from the initial outlay, and this might vary for many reasons (particularly the economic groups affected) considerably from the average time interval for consumption expenditures. Clark assumes that the average time interval for the *new* consumption expenditures (namely, the marginal Multiplier time interval) is two months.⁸

This may be illustrated as follows: Suppose a billion dollars new money (deposit currency) is injected into the system through government borrowing. Assume the leakage to be 50 per cent. Thus, in the next "marginal Multiplier" period (say, two months) \$500 millions would be spent on consumption. In another two months \$250 millions, and in still another \$125 millions, etc. After twelve months have passed, the initial expenditure will have added a total of \$1,984,125,000

⁸ At least this is my interpretation, to which, however, Clark might not agree. See his *The Economics of Public Works*.

to the national income via the functioning of the Multiplier principle. But all this tells us nothing about the marginal income velocity of the new money. New investment may have been made partly by reason of the increase in consumption (Acceleration Principle), and partly by reason of quite independent investment projects springing from the development of new industries and the like. Thus, it is quite conceivable that in a single year, after the new money was injected, the national income had increased by an increment of \$4 billions. Thus, the marginal income velocity of money would be four, and the marginal income period would be three months, while the Multiplier time interval we assumed to be two months.

There remains to be considered the relation of the magnitude of the leakages to the magnitude of the Multiplier and to determine on the basis of the assumed conditions how far the level of the national income will be raised as a result of (a) a continuous flow of governmental expenditures or private investment of a given magnitude, and (b) a single injection of expenditures of a given amount.

The former is illustrated by Chart 16. Here we assume that the government (or private investment) pours out in each period (determined by the marginal Multiplier time interval, say, two months) \$500 millions. From the chart it will be clear that, if the leakages are of a magnitude of $33\frac{1}{3}$ per cent, the income will presently after a lag be raised (through the continuous expenditure of \$500 millions) by \$1,500 millions per period. Thus, the Multiplier is three in the sense that the national income is lifted by three times the amount of the private investment or governmental outlays. The second case is illustrated by Chart 15, which shows the effect upon subsequent national income of a single expenditure of \$500 millions. If the leakages are $33\frac{1}{3}$ per cent, it is clear that all of the succeeding expenditures flowing from the initial expenditure summated over all future time would equal twice the initial expenditure, and that the sum total of the net addition to the national income resulting from the initial ex-

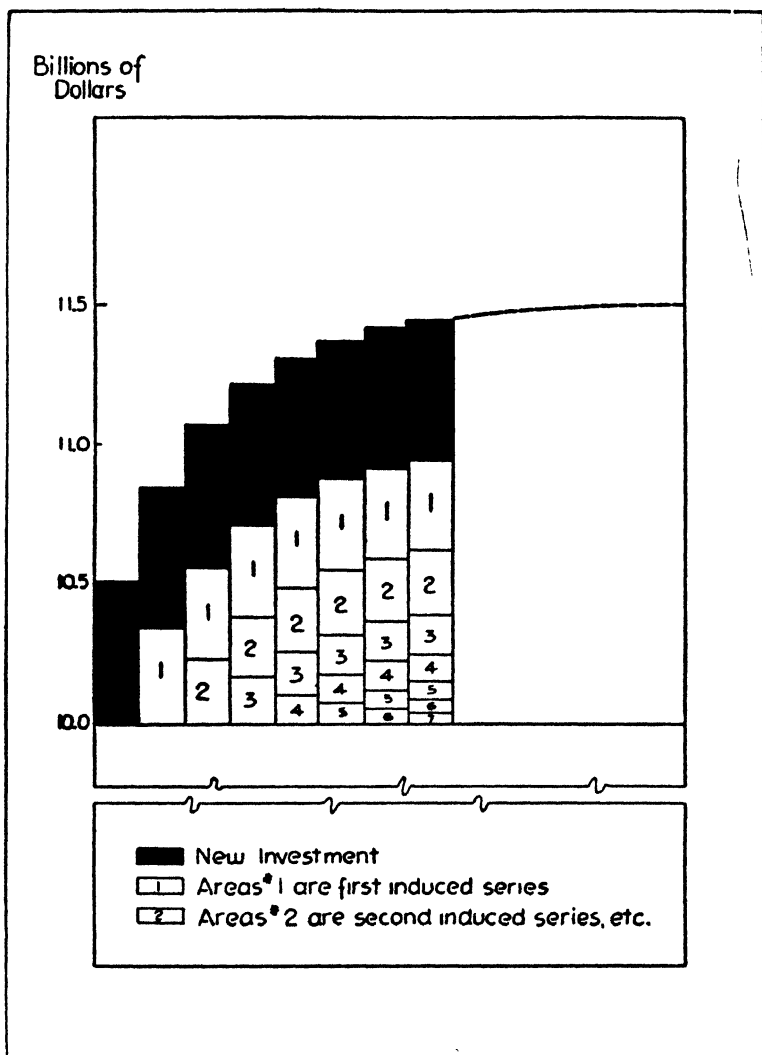


Chart 16.
Continuing Investment and Induced Consumption

penditures of \$500 millions would be \$1,500 millions. In this sense also, then, the Multiplier is three.

In point of fact, in both cases it is impossible to know precisely what the exact value of the Multiplier is, even though one knows the magnitude of the leakages currently experienced. This is true for the reason that one can never know what the magnitude of the leakages will be over all future time. It can readily be seen (Chart 16), however, that this point is of no great practical significance, since in a very few periods, given fairly high magnitudes of leakages, such as 50 per cent or $33\frac{1}{3}$ per cent, the national income approaches rapidly the asymptote which, strictly speaking, could be reached only at an infinitely future date. Similarly, with the injection of a single investment outlay or governmental expenditure (Chart 15), the secondary increase of the national income quickly approaches the limit reached at an infinitely future date. Thus, while in the former case the income level would eventually rise by \$1,500 millions per period, after six expenditure periods it would already have approximated this figure; and, similarly, in the second case, the secondary additional income would after six expenditure periods approximate the \$1 billions additional income which an infinite progression would yield.

From the diagrams and analyses given above it is clear that the Multiplier is high if the magnitude of the leakages is low, and vice versa. Indeed, if the leakages are zero, the Multiplier is infinity, and if the leakages are 100 per cent, the Multiplier is unity. This latter case means that there are no secondary effects on the national income from the initial expenditure. Thus, the magnitude of the Multiplier can be stated in terms of the marginal propensity to save, or conversely the marginal propensity to consume, as Keynes has done in his *General Theory*. The magnitude of the leakages is determined by the portion of the marginal income which is not used for consumption expenditures, or, in other words, is saved. Thus, if the percentage saved is zero, the Multiplier is infinity. If the fraction which is saved is one tenth, the

Multiplier is ten; if one fifth, five; if one third, three; if one half, two; and, finally, if 100 per cent is saved, the Multiplier is one, and, similarly, for intervening points. The Multiplier is thus the reciprocal of the marginal propensity to save, which determines the ratio of marginal saving to marginal income received. The Multiplier can equally well be stated in terms of the marginal propensity to consume. The Multiplier (K) stated in terms of the marginal propensity-to-consume

$$\frac{(\Delta C)}{(\Delta Y)} \text{ gives the formula } K = \frac{1}{1 - \frac{\Delta C}{\Delta Y}}$$

From Charts 15 and 16 it is readily apparent that the income will not remain at the new high level reached unless the private investment or governmental outlays continue to be poured out in a continuous stream. As soon as the governmental expenditures are withdrawn, the income again falls to its previous level. This phenomenon is in no sense a peculiarity of governmental spending, but is equally true of private investment expenditures.

The Acceleration Principle

Thus, the Multiplier Principle concerns exclusively the effect of private investment expenditure or governmental expenditure, as the case may be, upon subsequent net additions to consumption expenditure. The Acceleration Principle, to which we now turn, concerns exclusively the effect of a net increase in consumption expenditures upon induced investment expenditures. If we are to measure the full effect of private investment expenditures or governmental expenditures, as the case may be, on income, we must take account of both the Multiplier and the Acceleration Principle; we must measure not only the effect of these initial expenditures upon subsequent consumption, but also the effect of the subsequent increases in consumption upon investment induced by increase in consumption expenditures.

The volume of replacement investment expenditures is determined by the volume of consumption expenditures. In

the event that consumption expenditures remain constant, no *new* investment expenditures are induced, but only a given volume of replacement. In the event, however, that consumption expenditures rise, the net increment of consumption may induce a given volume of additional investment. This will occur even before existing equipment is fully utilized. If we start from the bottom of a depression, a rise in consumption expenditures is likely to induce a larger volume of replacement expenditures in the old, established industries. This follows from the fact that during depression depreciation allowances are not fully expended, and recovery tends to restore replacement to a normal level. If the increases in consumption expenditures occur in new lines, a given volume of new investment will occur, even though industry in general is still depressed. Thus, it is by no means easy to determine precisely in what degree a rise of consumption expenditures from the bottom of the depression affects, on the one side, replacement investment expenditures, and, on the other side, new investment expenditures. Statistical inquiry (see Kuznets) does, however, reveal that a rise in consumption expenditures from the bottom of the depression brings about a very smooth rise in gross investment, and there appears to be no point in the upswing at which one can clearly demarcate replacement investment expenditures from new investment expenditures; nor is there any sharp break in the gross investment expenditure curve, such as might be implied from an overemphasis on the effect of reasonably full utilization of existing equipment upon new investment, as consumption expenditures continue to rise.

The magnitude of the "Acceleration leverage"—we are here precluded by the current terminology from using the term "multiplier," since that is reserved, as we have seen, for a special case—will depend upon the concrete character of the new consumption. Certain types of consumption goods involve in their production virtually no capital equipment, while others require a very high ratio of capital to each unit of output. Thus, the "Acceleration leverage" cannot be de-

terminated on a priori grounds, but must be determined by investigation of the actual character of the new consumption. In general, we know that the average ratio of manufacturing capital to value added is about two to one.⁴ It by no means follows, however, that the marginal increments of income will require this ratio of capital to output. This ratio would vary with the different phases of the cycle and with the character of the new consumption purchases.

In the diagram below we have arbitrarily assumed, by way of illustration, that the ratio is unity. In this diagram we have sought to show the effects of both the Multiplier Principle and the Acceleration Principle, in order to disclose the combined effects of both in magnifying the national income.⁵

The Cumulative Process

The diagram (Chart 17) is constructed in the following manner: It is assumed that private investment or net income-creating governmental expenditures of \$500 millions are made in each "multiplier" period. The black blocks represent the magnitude of new private investment or governmental expenditures made in each successive period. The white blocks represent the total induced consumption expenditures for each period (over and above the basic income

⁴ National Industrial Conference Board, *Studies in Enterprise and Social Progress*, 1939, pp. 218, 220.

⁵ It may be noted that, whatever the Acceleration coefficient, the ratio of total investment to consumption will be the same. This follows from the fact that the induced investment (if any) will on its part induce, in turn, consumption expenditures, according to the value of the multiplier. If the multiplier is two, any initial investment will induce an equivalent consumption, and similarly any induced investment. Thus, whatever the ratio of initial investment to induced investment, the ratio of total investment to total consumption (both that induced by the initial investment as well as that induced by the induced investment) will be unity, if the marginal propensity to consume is one half. Hence, even though it is not possible to differentiate the total investment in any given period into its component parts—*independent and induced*—it is still possible to ascertain, in the statistical relation of investment to consumption, what is the marginal propensity to consume, and so the multiplier leverage.

Billions of
Dollars

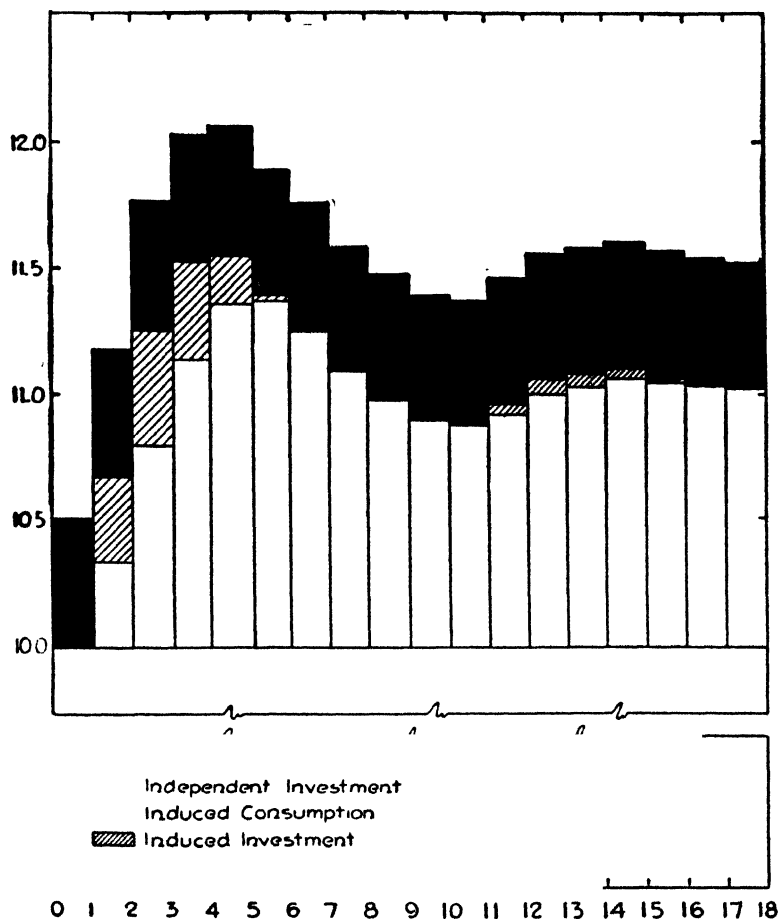


Chart 17.

*Induced Consumption and Induced Investment Flowing from
Continuing Independent Investment
Expenditure*

already prevailing when the experiment is started). The shaded areas represent the increments of private investment which are induced by reason of the net increase in consumption in the current period.

It is clear from the particular assumptions here made that the income at first rises much more rapidly than was the case when the Acceleration Principle was not taken into consideration, but it soon begins to fall,⁶ unlike the situation in Chart 16 where the Multiplier Principle alone was considered. It will be noted that the income curve fluctuates up and down with diminishing amplitude around precisely the level established in Chart 16. That is to say, the addition of the Acceleration Principle to the Multiplier Principle does not, in this case, affect the ultimate level of the national income but only the intervening path through which the income moves. This somewhat paradoxical result follows from the fact that the process of creating additional consumption goods is, in our modern economy, an indirect one and in fact involves, once the consumption increase approaches the asymptote, merely the continuous replacement of capital goods.

New investment is in no way affected by the *level* of consumption expenditures, but only by *changes* in the level of consumption. When consumption rises and falls, replacement and new investment expenditures are thereby affected, but the basic level of replacement expenditures is determined by the *level* of consumption. When consumption rises from a more or less established level to new high levels, new investment is stimulated via the Acceleration Principle; but once consumption ceases to rise, new investment is no longer necessary.

It should be noted that the conclusions drawn above are derived from a specific set of data. It is, therefore, necessary to inquire into what the situation would be were the condi-

⁶ It is assumed that, as soon as consumption expenditures begin to decline, disinvestment begins in accordance with the "Acceleration leverage" of unity; i. e., if consumption falls by one million dollars, one million dollars of disinvestment is induced.

tions different from those illustrated in the figure. Various model sequences, with given values of the Acceleration leverage and the marginal propensity to consume (from which the Multiplier leverage is derived) can be developed.⁷ The Acceleration coefficient is here designated by the notation " β " and the marginal propensity-to-consume by " α ." In the table on page 280, four selected values for these coefficients are assumed. Each pair of values results in a certain sequence of national income figures under the conditions assumed. In Column I (where $\alpha = 0.5$ and $\beta = 0$) we have the case already shown in Chart 16 above where account is taken only of the Multiplier Principle. It is, however, of interest to include it here, since it then becomes merely a special case of the more general analysis. In this case there are no oscillations and the income approaches progressively an asymptote. In Column II oscillations in the income develop, and it turns out that these are quite regular in character. In Column III the oscillations fluctuate with an increasing amplitude around an average value. In both these latter cases the average value, around which the oscillations occur, are equal to the asymptote which the income approaches when the Multiplier alone is taken account of or the Acceleration Coefficient is equal to zero. In the last column (IV) no oscillations occur, the behavior being "explosive upward approaching a compound interest rate of growth."

These columns give four selected pairs of values for α and β . But it is necessary to inquire whether other values would give still different types of results. The algebraic analysis made by Mr. Samuelson, however, reveals that these models cover all the different possible qualitative types of behavior, though the quantitative results vary, of course, with the values chosen. Thus, the whole field of possible values of the coefficients can be divided up into four regions. These regions are plotted in Chart 18. Each point in this diagram

⁷ See the article by Paul Samuelson, "Interactions Between the Multiplier Analysis and the Principle of Acceleration," *Review of Economic Statistics*, May, 1939.

TABLE XXV

Model Sequences of National Income for Selected Values of Marginal Propensity to Consume and Acceleration Coefficient

("a" = Marginal Propensity to Consume;

"β" = Acceleration Coefficient)

	I	II	III	IV
	$a = .5$ $\beta = 0$	$a = .5$ $\beta = 2$	$a = .6$ $\beta = 2$	$a = .8$ $\beta = 4$
Period				
1	\$1.00	\$1.00	\$1.00	\$1.00
2	1.50	2.50	2.80	5.00
3	1.75	3.75	4.84	17.80
4	1.875	4.125	6.352	56.20
5	1.9375	3.4375	6.6256	169.84
6	1.9688	2.0313	5.3037	500.52
7	1.9844	.9141	2.5959	1,459.592
8	1.9922	— .1172	— .6918	4,227.704
9	1.9961	.2148	— 3.3603	12,211.1216

represents a certain value for a and β . For each point a modal type sequence of national income through time can be determined. These types correspond with the four sequences illustrated in the table above.

In Region A the value for the Acceleration coefficient is relatively small, though not necessarily zero. It represents the type illustrated in Column I. Here the national income approaches an asymptote, the value of which is $\frac{1}{1-a}$ (in other words, the "Multiplier") times the governmental expenditure injected in each successive period plus the original income level. Whenever the expenditure ceases, the national income falls to the original level.

In Region B damped, oscillatory movements of the national income occur as in Column II. These movements gradually approach an asymptote established by the Multiplier Principle, namely, the original income plus the governmental expenditure times the Multiplier $\frac{1}{(1-a)}$.

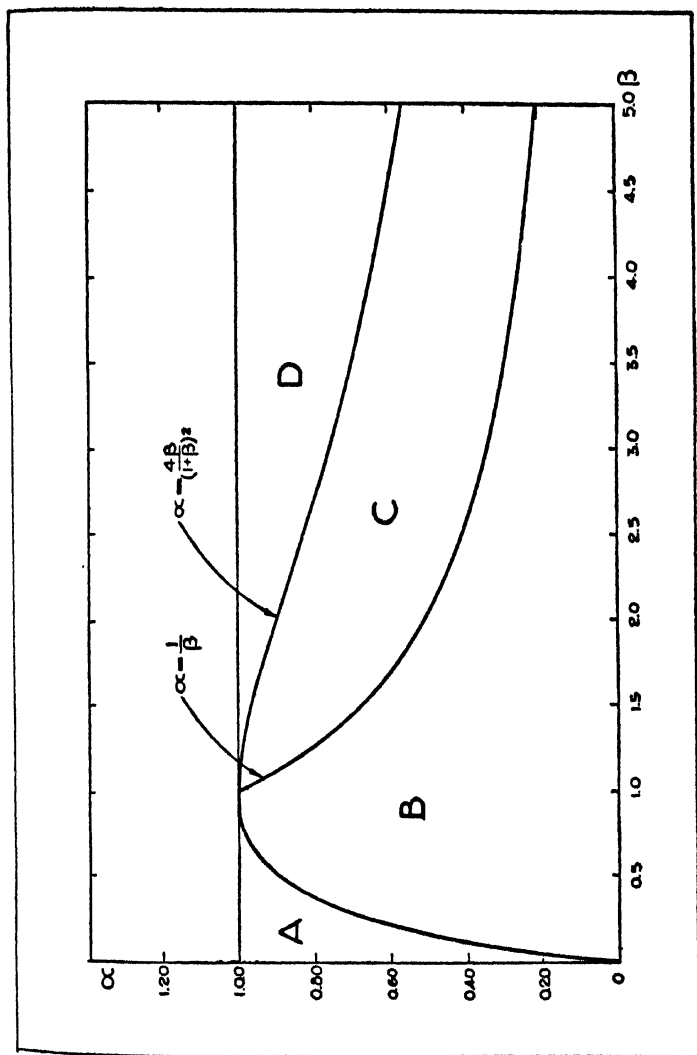


Chart 18.
Marginal Propensity to Consume and the Acceleration Coefficient

In Region C increasing oscillatory movements develop around an asymptote equal to that which would be established when the Multiplier alone is considered. The possible values of the coefficients at different points in this Region give results corresponding to the type illustrated in Column III.

In Region D we observe large values of both the marginal propensity-to-consume and the Acceleration coefficient. The range of values of the coefficients in this Region give ever-increasing national incomes, eventually approaching a compound interest rate of growth. These results correspond to the type illustrated in Column IV. This situation is a perfect example of a never-ending cumulative process of expansion. Investment stimulates consumption, and consumption, in turn, stimulates investment, and this interaction proceeds ad infinitum. If permitted to continue without check, it also illustrates the case of astronomical inflation.

It must, however, be noted that the analysis we have given above is based on very simplified and unrealistic assumptions with respect to the relation of consumption and investment. It is well known, particularly by reason of the work of Kuznets and Tinbergen, as well as the earlier work of J. M. Clark, that the simplified conditions usually assumed when the Principle of Acceleration is under discussion are rarely valid in the actual world. When more realistic assumptions are introduced, it is clear that the effect of new consumption upon investment is a very complex and uncertain one. In the actual world the replacement of capital goods is not a rigorous proportion of the existing stock of such goods. Replacement demand varies not only with the size of the capital stock, but also with its age composition, with changes in the life period and obsolescence, and many other factors. The Acceleration coefficient varies, moreover, with the degree of existing excess plant capacity and many other considerations affecting the decisions of entrepreneurs with respect to new investment. Thus, it is a mistake, at least from the short-run point of view, to place too much emphasis upon the Principle

of Acceleration. Probably its most useful application to the actual world has to do with the effect of the growth of a new industry and the growth of population. Here the Principle of Acceleration appears to apply with great force. During the period of rise of a great new industry a vast amount of new investment is stimulated directly and indirectly, and when the industry reaches a plateau, all these related investments disappear, and there remain only replacement investment expenditures.

Conclusions

Certain extremely important conclusions follow from an examination of the operation of the Multiplier Principle and the Acceleration Principle. These may be summarized as follows:

1. New investment, except for short-run fluctuations in the volume of consumption expenditures, and except for very high values of the Multiplier and Acceleration coefficients, is not affected by the volume of consumption expenditures. Thus (with the exceptions noted), as far as any long-term effect is concerned, the level of consumption in no way affects the level of new investment. A firm grasp of this fundamental conclusion must minimize very much the practical significance of the Acceleration Principle. Replacement investment expenditures are obviously not to be counted at all as a constituent element in the size of the national income, since it is already incorporated in the consumption figures. The value of consumption, of course, consists of the cost of production of such goods, including the cost of replacement of the capital goods required to make the consumption goods in question. The level of consumption determines the volume of replacement investment expenditures. Net investment, however, is a function, in the short run, of *changes* in the level of consumption.

2. There is, therefore, no possibility (except for the case of high leverage values) of raising the income to higher and higher levels by the process of lifting yourself by your boot-

straps via the interrelation of increased consumption and increased investment in the familiar expansionist process. Instead, as we have shown, the Acceleration Principle, except for temporary fluctuations and the special case of high leverage values, has no effect in lifting the national income at all. The national income can, therefore, in the long run and in the normal case not rise, contrary to commonly accepted but clearly superficial views, by reason of an induced investment springing from an induced rise in consumption.

3. The volume of consumption can be increased, in so far as unemployed resources are available, by net private investment induced by factors, which we shall presently discuss, having no relation whatever to the current level of consumption, or else by governmental expenditures involving the use of new funds and, therefore, not abstracting from the current level of consumption. How high consumption can be pushed by given increments of private investment expenditures or of governmental expenditures depends upon leakages (which are determined by the propensity to save), as explained under the Multiplier Principle. But the new higher level of consumption rapidly falls to its former level unless the net private investment outlays or the governmental expenditures are continued at a constant level.

4. At a given level of income, consumption equals income, or, in other words, the average propensity to consume is equal to one. At this level of income, and at this level alone, a given volume of consumption expenditures is self-perpetuating, and income *tends* to be maintained at a constant level. If income produced temporarily falls below consumption, the gap between the two represents disinvestment. But this situation tends toward a new equilibrium at which income produced and consumption are equal. At this point also there is *no net* investment. The system is self-perpetuating in the sense that 100 per cent of the income received is consumed, and thereby current aggregate demand gives rise to production activities through which a new monetary aggregate demand is created equal to that in the previous period. This is the "cir-

cular flow" so vividly described in Schumpeter's *The Theory of Economic Development*.

The national income can, therefore, be divided for analytical purposes into two compartments: the first we shall call the "basic national income," at which the average propensity to consume is equal to one, which income level tends to be self-perpetuating; and the second, the "dynamic income," which, as we have noted, is the margin filled by net investment (private and public) and by the consumption induced by this net investment. It is this dynamic income which is extremely unstable and within the area of which the fluctuations of our economic life occur. This margin need not be wholly filled by net private investment or net income-creating governmental expenditures. But it is these two which are the dynamic factors creating the income above the minimum basic level. According to the size of the leakages (determined by the marginal propensity to save), a part of the margin between the basic income and the full income will be filled by induced consumption expenditures. If the marginal propensity to save that part of the full income which is above the basic minimum income is one half, consumption expenditures will fill one half of this margin. If the marginal propensity to save is one third, consumption expenditures will occupy two thirds of the margin. If the marginal propensity to save is one quarter, consumption expenditures will occupy three quarters of the margin, and so on.⁸

The income level at which consumption equals income may be said to be self-sustaining in the sense that no new,

⁸ Erroneous conclusions sometimes follow from confusing the Multiplier coefficient with the income velocity of money. It is, of course, true that a dollar used in expenditures flows through the system and becomes income for others two or three times during the year. This, however, has nothing to do with the Multiplier as such, but has merely to do with the customs and habits with respect to the use of money, under which a given volume of income expenditures during a year is normally accomplished by a volume of money equal to, let us say, only one third of the income expenditures made. Under these conditions the income velocity of money obviously is three. But it may be that the injection of more money, instead of raising the national income, will only result in a decline in velocity.

independent, anticipatory investment is necessary to maintain this income level. It is, of course, true that the income may well fall below this basic level owing to dissaving. But this may be regarded as an abnormal, temporary maladjustment, which will sooner or later correct itself. In a progressive society, dissaving can only occur as a temporary phase of the business cycle. If consumption exceeds income (as is true in a serious depression), it follows that replacement capital expenditures are inadequate to sustain the given level of consumption and must sooner or later rise to a point at which no further disinvestment occurs.

Thus, consumption expenditures in a "circular flow" economy in which consumption equals income tend to be self-perpetuating. On the other hand, the net private investment and net income-creating governmental expenditures (together with the secondary consumption expenditures which they induce) are in no sense self-perpetuating. As long as these investment and income-creating expenditures are made, they induce a volume of consumption expenditures above the basic minimum level and thereby have a multiplying effect on the national income.

While from the long-run standpoint the Acceleration Principle (in the usual case) is incapable of raising the level of the national income, it must still be noted that it may have an effect which, under certain conditions, may be very considerable on the cyclical pattern. Without the Acceleration Principle one may argue that private investment or the net income-creating expenditures of the government may lift the national income by a certain Multiplier and hold it there until the investment or net income-creating expenditures cease, whereupon the income rapidly falls to its original level. Under conditions in which, however, the Acceleration Principle is really effective, the stimulated recovery will advance much more rapidly than would otherwise be the case. Still more important, perhaps, is the fact that it may reach a peak and decline with greater or less rapidity, even though the investment and net income-creating expenditures were

continued at a constant level. Thus, it is quite possible that a volume of investment or net income-creating expenditures continuously applied may not even be able to sustain the recovery reached. Generally speaking, in the measure that the net income-creating expenditures are extremely effective in creating a burst of recovery, as would be the case when the Multiplier and Acceleration coefficients are high (though not as high as represented by Region D), it may be expected that sooner or later a serious relapse will occur. We may, therefore, conclude (within limits) that the more effectively the investment or net income-creating expenditures operate, the less sustained the recovery is likely to be. This is true, however, only to the extent that the effectiveness in question runs in terms of both the Acceleration and the Multiplier Principles and not in terms of the Multiplier alone. As far as the Multiplier Principle is concerned, the induced recovery can be expected to sustain itself as long as the expenditures continue, but not much longer. If the Acceleration Principle is operative, not even this degree of permanence can be relied upon.

Net income-creating governmental expenditures are undertaken by the government either because the community deliberately wishes to make capital expenditures in order to obtain the utilities directly flowing from the completed projects, or because the community determines to make these capital expenditures in order to raise the national income and thereby escape the wastage incident to unemployed resources. Net private investment is, on the other hand, induced purely in response to the profit motive. Spontaneous net private investment has no relation to the current level of consumption, and any increase in consumption has ordinarily only a temporary and rapidly vanishing effect upon net private investment. Thus, net private investment is fundamentally a function of factors lying quite outside of the current volume of consumption or the current volume of income—factors associated with the dynamics of economic progress. In the absence of new investment outlets adequate to maintain the

boom, it is clear that any continued volume of investment, such as would be necessary to maintain income at a full level, would rapidly experience a drastic fall in the prospective rate of profit on new investment (the marginal efficiency of capital). Such a fall progressively weakens the inducement to invest, until net investment equals zero. The classicals were quite right when they argued that without technological progress the price system, including the rate of interest, would progressively drive the economy to the point at which there would be no net investment. They were wrong in assuming that the price system could also ensure a propensity to consume compatible with this investment situation so as to provide full employment.

Chapter XIII

COMPENSATORY TAX POLICY

IN the previous chapter we have discussed how private investment and governmental expenditures may affect the national income. We have examined the theoretical principles determining the leverage of such expenditures upon the national income and the necessity for the continuation of such expenditures in order to *sustain* the national income. In this chapter we consider particularly cyclical aspects of compensatory fiscal policy.

First, we concern ourselves with compensatory policy in a society which is sufficiently dynamic in terms of its private investment outlets to develop vigorous booms. What sort of tax policy is best designed to minimize cyclical fluctuations in a society which, except for periodic depressions, tends toward full employment of resources? We are thus concerned primarily with the question of a cyclical tax policy designed to minimize industrial fluctuations.

Comparison may be made between the cyclical fluctuations in a highly dynamic, high-savings economy and those in a less dynamic society which has at the same time achieved, through its fiscal policy or otherwise, a high level of consumption in relation to income—a high propensity to consume. The former will tend to have a violently fluctuating cycle; the latter a mild cycle. Both, we assume, tend toward full employment in the prosperity phase.

Chart 19 represents the consumption functions which fulfill the conditions stated. "A" represents the consumption function in a high-savings society; "B" the consumption func-

tion in a high-consumption economy. On the basis of Consumption Function A, the income will fall to 60 per cent of the full income level before consumption equals income, or, in other words, before the average propensity to consume

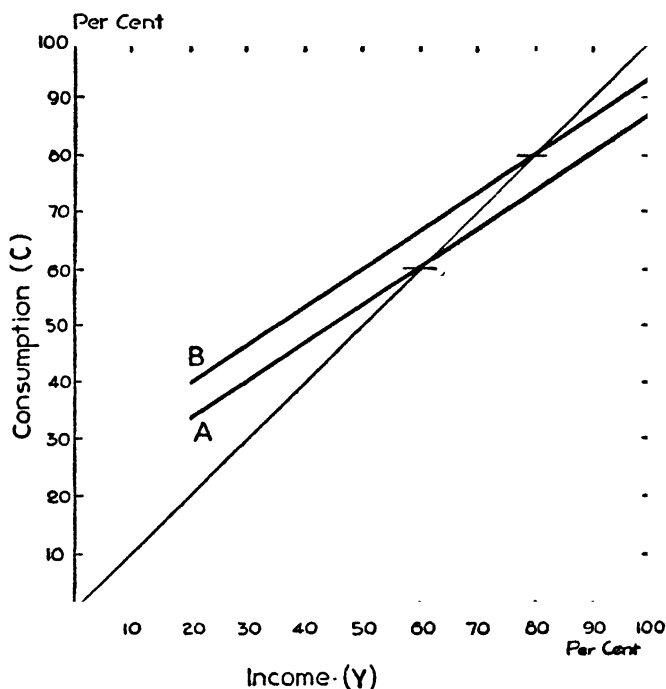


Chart 19.

The Consumption Function in a High-savings and a High-consumption Economy

equals unity. According to Consumption Function B, however, at 80 per cent of a full income level, the whole income is consumed.

Chart 20 represents the cyclical behavior of the highly

dynamic, high-savings economy, while Chart 21 represents the cycle movement in a mature, high-consumption economy. It is assumed in both cases that the amplitude of the cycle fills the whole gap between the self-sustaining income

Billions of
dollars

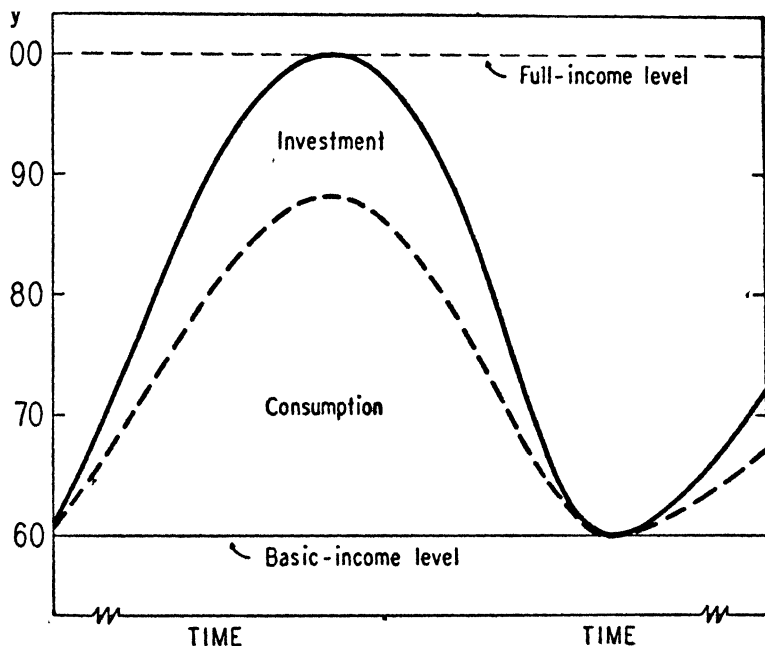


Chart 20.

Cyclical Behavior of a High-savings Economy

level (at which $C = Y$) and the full income level. It is also assumed that in each case the marginal propensity to consume is 0.67. Accordingly, in both cases investment is assumed to constitute one third, and consumption two thirds, of the fluctuating part of the income above the basic level. These arbitrary assumptions may be modified without invalidating

the usefulness of the general scheme of analysis here employed.

Whatever may be true of the actual magnitude of the fluctuations in the two cases, it is at any rate true that a high-consumption economy (illustrated in Chart 21) can reach full employment on a lower volume of investment expenditures, unless, indeed, the marginal propensity to consume were much lower than in the high-savings economy—a con-

Billions of
dollars

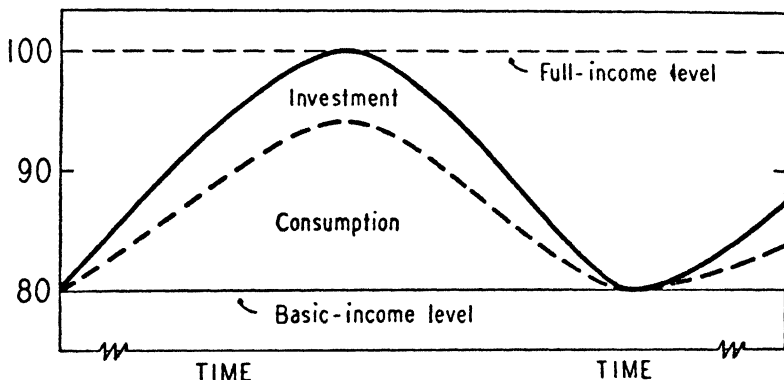


Chart 21.

Cyclical Behavior of a High-consumption Economy

dition not very probable, though theoretically not impossible. In a world in which independent investment outlets are relatively limited, a high-consumption economy is not only less likely to fall to low employment levels, but is, moreover, able to achieve full employment with relatively small investment outlays.

Stabilizing the Cycle

We may now consider the proposal to minimize the cycle movement by a system of fluctuating tax rates. There is not much use in discussing this proposal with respect to all types

of taxes, since for many taxes such a scheme of timely fluctuation of rates is difficult, if not impossible. From a practical standpoint, relatively few taxes can be timed speedily. Taxes on payrolls and sales taxes can, however, very effectively be manipulated and timed according to the requirements of the cycle.¹

Consider, first, a payroll tax collected at the source. Since we are concerned here purely with an effort to achieve stability, it is clear that the tax in question is not designed over the long run to produce any revenue for the government's operating budget, but is designed exclusively to facilitate economic stability. It follows, therefore, that when the taxes are collected, such collections should in some manner be placed in a fund which could subsequently be drawn upon and expended.²

Let us assume that the tax on payrolls is applied at some advancing rate during the last half of an upswing period, for example, from the point at which a half of the cyclical unemployment has been overcome. The tax would then be raised progressively as the peak of the boom is approached. As soon as it is evident that a turning point has been reached, the tax collections should cease entirely. Once it appears, however, that a recession is definitely under way and is in danger of developing into a cumulative deflation, the surplus funds previously collected should be drawn upon and poured back into the income stream.

To the extent that the payroll taxes were assessed against employers, they could be returned to aid employers to maintain current wage rates. In so far as payroll taxes had been deducted from wages, they should be returned to the wage earners to help maintain labor incomes in the depression.

In the former case, the remission of the funds would, in effect, lower the effective wage rate and thereby make it

¹ Income taxes collected at the source could also be made flexible.

² A more elaborate proposal, involving deferred wage payments, designed to help finance the war without inflationary consequences and to sustain the postwar economy, was published by J. M. Keynes in *How to Pay for the War*, Harcourt, Brace, 1940.

easier for the employer to maintain as nearly as possible a full corps of workers. In so far as this result is achieved, employment and consumption expenditures would be sustained. It is true that the employer might pocket the subsidy without maintaining or extending the volume of employment. It would not be easy to ascertain what the volume of employment would be were there no subsidy, and it is only from this bench mark that one can determine the extent to which the employer is using the subsidy for the maintenance or expansion of employment. There is thus the danger that, if the payroll tax fund is employed in this manner, the net effect would be merely to add to idle funds. But even this would at least have the favorable effect of increasing the liquidity of the firm and would thereby tend to hasten, sooner or later, expansionist activities. On balance, the imposition of a payroll tax on employers would tend to restrain the boom, and the repayment of these sums in depression would probably have some favorable cyclical compensatory effect.

In the second case, the payroll tax is a device to enforce compulsory saving upon wage earners during the boom, which savings are returned to the wage earners in the depression period. It is a deferred wage payment plan, wages being withheld in the prosperity phase and returned with interest in the depression phase. The plan would have a favorable indirect effect on employment, since the wage earners would have a larger income to spend in the depression. There is, however, the danger that employed workers receiving the deferred payments in a period of falling prices might save most of the windfall. The effect on consumption and, therefore, on employment, as far as these wage earners were concerned, might well be relatively small. The effect on consumption expenditures would, however, be definitely favorable with respect to part-time workers and unemployed workers.

Unemployment insurance financed by payroll taxes forms a special kind of tax on wages. The size of the payroll varies with the cycle and, therefore, the total tax collections rise and fall with the fluctuations in business conditions. More-

over, since the collected funds are disbursed in benefit payments to the unemployed in the depression period, the net tax collections should rapidly approach zero and even become a minus quantity. Thus, on balance, such tax funds are collected mainly during prosperity periods and are paid out to wage earners (though not to employed workers) in depression periods.

A cyclically adjusted sales tax can be implemented in a manner somewhat similar to a tax on wages. Such a tax, applied in the last phase of the upswing, would act as a drag on the rise of consumption expenditures. Under the assumptions which are here made, however, it is expected that such a sales tax would not check the advance short of full employment but would only make the advance steadier and thereby more prolonged. It is assumed that the tax is not severe enough to stop the dynamic forces which tend to drive the economy on toward full employment.

The funds collected from the sales tax might, as in the case of the wage tax, be distributed in the downswing and in the early stages of recovery. Such a plan would be a sales tax in reverse. But it does not appear probable that such a distribution could be implemented. It would require an extremely complicated and expensive accounting control to disburse the funds through the retailers to all purchasers of retail goods in some proportion to purchase vouchers. It would be much easier, from the standpoint of administration, merely to use funds so collected to finance government deficits arising from expansion of public works or relief expenditures. To make the funds most effective, it would be necessary that they constitute a *net addition* to public works (or to relief expenditures) during a depression period.

The purpose of these taxes is to check an undue expansion of consumption in the boom and, through their removal together with the return of previously collected taxes, to stimulate consumption in the depression. Moreover, they may be especially useful as a means to check a wartime inflation.

Question arises whether the best method of controlling

cyclical fluctuations is to impose in the upswing period a tax on consumption. Payroll taxes and sales taxes are peculiarly taxes which abstract from the consumption stream. This raises the very fundamental question whether the most desirable compensatory policy is to tax income which would normally flow into consumption or to tax income which would normally flow into savings. A tax which diminishes the flow of savings will impose some check upon investment in so far as investment expenditures cannot be financed adequately through monetary expansion. In so far as the taxes are imposed on income which would normally flow into consumption, not only are consumption expenditures reduced, but induced investment (via the Acceleration Principle) is also curtailed.

We are assuming here, it will be recalled, a society which is highly dynamic and in which economic progress develops surging private investment booms, and which tends, therefore, automatically toward full employment of resources. Yet, periodically, the upward march is interrupted by reason of the inherent tendency of a free enterprise economy to develop cyclical fluctuations. In such a society, be it noted, the rising income in the prosperity period is created not by government expenditures, but by net private investment. If now the mainspring of a surging investment boom has relatively little relation to the current level of consumption, but mainly to the stimulus flowing from economic progress (inventions, the discovery of new resources, the exploitation of new territory), the boom might not be seriously checked by payroll or sales taxes. Under a surging investment boom the induced consumption is likely to be very large, and the imposition of taxes on consumption might, therefore, merely steady the situation. Moreover, if consumption taxes are employed instead of income taxes, it is likely that the investment will be financed more fully from voluntary savings and less from bank credit expansion. This also would make for a healthier boom. If a sharp step up were made in income tax rates, with no restraint on consumption (via payroll or sales taxes), con-

sumption expenditures would rise rapidly, thereby (via the Acceleration Principle) adding to the investment stimulus (already vigorously fed from the independent factors of economic progress) still more. It thus appears that, under the conditions here assumed, the boom would develop in a more stable manner under a cyclical adjustment of payroll or sales taxes than under a cyclical adjustment of highly progressive corporate and individual income taxes.

It has sometimes been argued, especially from the standpoint of the under-consumption theory of the cycle,³ that the boom comes to an end because of a deficiency of consumption *in the boom years*. According to this view, there is something wrong with the ratio of consumption to investment during the boom. The ratio is said to be too low. But this position is, I think, not defensible. If one deducts the independent, spontaneous investment from total investment, one derives as the remainder the residue of investment which bears a relation to consumption. If consumption is increased, the investment needed to supply the flow of consumption goods will increase also. Dependent (induced) investment would rise if consumption rose. Independent investment would presumably remain unaltered. Thus, if you increase consumption, you will also increase investment. The ratio of consumption to induced investment will not be altered. Thus, the boom will be magnified if consumption is stimulated, and, if spontaneous investment is strong, such a process may even engender some considerable price inflation. Once the spontaneous investment has run out, a depression will ensue, and it will be all the more intense by reason of the extra stimulus given to consumption (and thereby induced

³ Some readers have wrongly inferred that I subscribe to the under-consumption theory of the cycle. This is quite wrong. The depression, in my view, is caused by a decline in investment—a decline resulting not from inadequate consumption, but from the temporary saturation in spontaneously evolving investment opportunities. It is, of course, true that, if it were possible for consumption to rise as investment declines, no serious depression would ensue, although some transitional difficulties would be encountered. But the under-consumption theory alleges a difficulty in consumption in the boom period.

investment via the Acceleration Principle) in the boom years.

We have just discussed the relative effects of a tax on consumption (wage or sales tax) and a tax on the savings stream (steeply progressive income tax) upon the cycle movement, under the assumption of a vigorous expansionist tendency operating virtually exclusively in terms of private investment. The problem is to bring about a shift of the consumption function by means of a shift in the tax structure, so that the fluctuations in private investment will be overcome by offsetting fluctuations in consumption.

Raising the Propensity to Consume

We have now to consider a cycle development which is stimulated largely through net income-creating expenditures of the government. Here it is assumed that private investment outlets are, on the whole, inadequate, and that we have to deal with a long-run condition of chronic unemployment.

If the recovery is proceeding mainly under the stimulus of net income-creating governmental expenditures and to a relatively small degree under the stimulus of forward-looking private investments related to economic progress, the essential problem is that of modifying the functioning of the economy so as to render the new income, in a measure, self-perpetuating. From the analysis which we have given above, it follows that, if the larger new income is to be made self-perpetuating, it will be necessary in some manner to shift the level of the basic income (at which consumption is 100 per cent of income) to a higher plane. This means that the propensity to consume must somehow be increased, the consumption function must be shifted upward so as to reduce the margin between the basic self-perpetuating income level (at which consumption equals income) and the full-income level. The problem is not to cause a cyclical fluctuation in the consumption function (offsetting the fluctuation in the rate of investment), as in the case considered above, but to raise permanently the propensity to consume.

A redistribution of income, through social or community expenditures and a progressive tax structure, may affect the aggregate consumption function. Since the payroll and the sales taxes clearly weigh on consumption, such taxes would weaken the propensity to consume. On the other side, a steeply progressive income tax would alter the distribution of income and would tend to strengthen the propensity to consume. The income level at which aggregate consumption of the nation as a whole would equal income would be raised. Raising income tax rates would tend in the direction of making the newly created income more nearly self-perpetuating.

In the event that there is not available an adequate volume of forward-looking, anticipatory private investment, it will be necessary to substitute public investment, or else, by tax measures and otherwise, to make the newly created income as far as possible self-sustaining. In a situation in which investment activity is relatively weak, it is not necessary that as large a proportion of income shall be saved and expended on capital goods as in the case of a highly dynamic economy. It behooves such a society, therefore, to adjust itself to a higher consumption basis. Consumption is necessarily the ultimate end of economic activity. Savings perform a useful function in so far as they are necessary for growth and expansion. But, in a less dynamic society, we are confronted with the alternative of using more of our resources for the production of consumption goods, whether durable or nondurable, or else of permitting them to run to waste through nonutilization. Such a society needs peculiarly to stress consumption if it is to achieve full employment.

We have reached the conclusion that, in a highly dynamic economy in which investment booms are vigorous, the appropriate type of taxes to apply during the boom is some form of tax on consumption. On the one side, this policy would tend to hold in check an abnormal rise in consumption and thus dampen the induced stimulus (via the Acceleration Principle) to investment. On the other side, such a policy would provide funds for investment more largely from

voluntary savings and thereby minimize the excesses of bank credit expansion.

In a less dynamic, less rapidly expanding (mature) economy, investment booms are less vigorous. Such a society is, therefore, less likely to reach full employment. In such a situation it is important to stimulate consumption expenditures. When booms are weak and incomplete, consumption taxes should not be applied as a cycle control measure. These circumstances suggest measures to raise the propensity to consume and develop a high-consumption economy.

Question may be raised as to whether the progressive income tax rates, designed to raise the propensity to consume, should fluctuate with the cycle, being increased in the boom and reduced in the depression; or whether the rate structure, while steeply progressive, should remain fixed in the various phases of the cycle. On balance, the latter is to be preferred. Excessively high rates in the boom cannot help the basic problem of increasing the aggregate community consumption over the entire cycle, since higher rates in the boom presuppose lower rates in the depression. The total volume of funds tapped from the savings stream and diverted into community consumption would not thereby be increased over the entire cycle period. Again, it may be argued that extra high rates should be levied during the boom phase in order to pay off cyclically incurred debt. But this is scarcely valid, since higher rates in the better years imply lower rates in depression, and hence the cyclical debt problem is not helped by such a fluctuating tax structure.

The milder cyclical fluctuations of private investment in a society such as that here under consideration could best be compensated for not by a tax program, but by offsetting fluctuations in governmental expenditures.

Thus, for a dynamic, expanding economy enjoying vigorous booms a fluctuating consumption tax may be the appropriate tax policy; for a less rapidly expanding, mature economy a fixed but steeply progressive income tax structure is indicated.

Chapter XIV

THE DYNAMIC VERSUS THE CIRCULAR FLOW ECONOMY

THE central stream of economic thought, comprising the early classical and neoclassical writers, has often been described as a system of static economics. It consisted essentially of an analysis of how the pricing process determines the allocation of productive resources. It explained how commodities and productive agents are priced in a "circular flow" economy and how, in a society so constituted, the productive process generates a demand for the products which it creates, so that the economy could continue to function at full employment. The rigorous Ricardian analysis explained how the pricing process ensures the reproduction of both the capital and the labor supply without either growth or contraction. It explained how the productive process is able to create consumer demand sufficient to absorb the whole product. In a "circular flow" economy, consumption equals net output. Saving takes the form of allocating a sufficient amount of the gross product to capital replacement. In such a society the whole of the net real income is consumed and aggregate saving is directed exclusively to capital replacement. In such a society the level of consumers' demand determines the volume of investment.

Such was the character of the equilibrium state of early classical theory. Profits tend to fall to that irreducible minimum which will just ensure a maintenance of the accumulated capital stock. Wages tend to fall to the so-called "subsistence" level, varying from country to country according

to the achieved standard of living, at which the population will just reproduce itself.

This analysis correctly perceived that the price system *per se* could not generate economic progress. It recognized that the price system, no matter how flexible or how perfectly competitive, could not of itself provide any net investment outlet. Progress could be generated only by innovations, the development of new products, new techniques, new methods of production, the discovery of new resources, and the opening of new territory. Thus, already in early classical doctrine net investment and net saving were regarded as a function not of the operation of the price system, but rather as a function of progress in the arts.¹ Through the development of technology and the exploitation of new resources, the price system is distorted away from static equilibrium, away from the "circular flow" economy in which consumption equals production. In a progressive society, investment is no longer purely a function of consumption. The tables are turned upside down. Consumption, under the dynamic stimulus of expansion, now becomes in considerable measure a function of investment.

It is just this fact which explains the emergence of business fluctuations. The business cycle, under the automatic functioning of the economy, is the inevitable by-product of growth and economic progress.

The price system in such a society is compelled to adjust itself to an unruly, unstable economy with a violently fluctuating output. The norm of the price structure is no longer reached, as in the "circular flow" economy, at the full output level. At full employment the distribution of the product among the contributing agents is skewed toward an excess of profits. The investment boom, created by innovational developments, distorts the system away from the equilibrium position at which the cost-price system is in balance.

¹ According to the classical economists, the tendency toward the stationary state could be checked only by invention, territorial expansion, and population growth.

The norm toward which the equilibrating process in a dynamic society tends, in the event that growth and technological change prove inadequate to provide investment of boom proportions, is an equilibrium point short of full employment. How far the equilibrium norm in a dynamic society will diverge from full employment depends upon how far the expansionist forces had previously driven the price structure away from the "circular flow" *tableau economique* of a static society. This follows from the fact that the process of economic progress, with its attendant fluctuations of income and employment, has created a set of firmly rooted institutional arrangements which are not easily altered, and which do not permit an easy return to the "circular flow" norm of a static society. The economy cannot automatically pass swiftly from a condition of dynamic expansion to a full-consumption society in which consumption equals income without encountering serious unemployment. The orientation of the price system to the requirements of a rapidly growing and widely fluctuating economy has created consumption and saving patterns out of line with the "circular flow" equilibrium. The institutional framework is thus geared to produce full employment only at high investment levels.

Consumption and Net Investment

In the "circular flow" economy, replacement investment is determined by the level of consumption. But in an expanding, dynamic economy, net investment is essentially spontaneous and independent of the current volume of consumption. Indeed, a large part of consumption now rises and falls according to fluctuations in the rate of investment.

An essential difference between the type of analysis of economic crises represented by Malthus, Sismondi, and Hobson on the one side, and that represented by Spiethoff, Cassel, Robertson, and Schumpeter on the other, is to be found in the treatment of these two schools of the relation of consumption to net saving. Malthus and his followers thought that